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BRITISH MUSEUM
GENERAL
- 6 MAY 1981

Bournemouth Natural Science Society

Proceedings

(1979 - 80)

VOLUME LXI

PART 2

Bournemouth Natural Science Society

Introductory Note

The objects of the Society are declared by the second of its rules to be "the promotion of the study of Science in all its branches, and of Public Education by means of Lectures, Field Meetings, the Reading and Discussion of Papers, and in any way that the Council of the Society shall deem advisable".

The branches of Science at present represented are as follows:—**Archæology and History, Astronomy, Botany, Entomology, Geography, Geology, Ornithology, Photography, Physics and Chemistry, and Zoology.**

Frequent meetings are held comprising Lectures and Demonstrations on subjects of scientific interest, illustrated by lantern slides, films, the epidiascope, diagrams, specimens and experiments.

Field Meetings are held in various suitable places in the neighbourhood of the town, or sometimes Coach Tours are arranged to districts of scientific interest at a distance.

The management of the Society is vested in a Council, which is elected at the Annual General Meeting.

The Society possesses a Library available for the use of Members. Books may, under certain conditions, be borrowed by Members, and there is a Reading Room in which works of reference may be consulted. The Museum contains many valuable scientific collections and specimens. There is a well-equipped Dark Room for the use of Members interested in Photography.

Members are elected by the Council and pay an annual subscription of £7 for full membership. Life Subscription £70. Family Subscription (for members of a family living in the same house) is as follows: First Adult Member £7, additional Adult Members £3. Associate Membership Subscription is £1 and is restricted to young people up to 18 years of age or, if a bona-fide full time student, up to 21 years of age.

Country Membership applies only to those Ordinary Members who reside permanently **Outside** the boundaries of Bournemouth, Christchurch and Poole.

Subscriptions of Country Members are, First Adult Member £3.50, additional Adult Members, same family £2.

Special subscription for visitors to Bournemouth, £1 per month.

Members may enter into a Deed of Covenant to pay subscriptions by Banker's Order over the period of four years. At present, the Society benefits by approximately 43p on each £1 subscribed in this way. Full particulars from the Hon. Treasurer on request.

A three-monthly programme, giving full details of all meetings is supplied to every Member and a Volume of Proceedings is published each year of which each Member receives a copy (additional members of a family living in the same house on application to the Secretary).

Further particulars and membership application forms may be obtained from the Honorary Deputy Secretary, Bournemouth Natural Science Society, 39 Christchurch Road, Bournemouth.

BRITISH MUSEUM
GENERAL
- 6 MAY 1981
LIBRARY
NATURAL HISTORY

PROCEEDINGS

of the

Bournemouth Natural Science Society

VOLUME LXI

PART 2

1979 - 80

Edited by
S. C. S. Brown

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A set of back numbers may be consulted in the Society's Reference Library or individual Volumes borrowed from the Lending Library on application to the Librarian.

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Bournemouth Natural Science Society

OFFICERS AND COUNCIL FOR 1980-81

N.B.—University degrees and other qualifications are inserted only at the first mention of names.

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Deputy Chairman : G. TEASDILL

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W. J. GUSCOTT, C.ENG., F.I.E.E.

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Botany: MRS. D. DAIN
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Zoology—Entomology: SQ. LDR. J. L. C. BANKS
Mammalia: MISS K. M. BENNETTS
Ornithology: MRS. L. M. MADDOX
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Cine Programme: F. B. MARTIN, F.C.I.I.

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H. H. C. LANGFORD
H. P. WHEELER

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PRESIDENT, DEPUTY CHAIRMAN, HON. TREASURER, HON. SECRETARY, CHAIRMAN OF CHAIRMEN OF SECTIONS COMMITTEE, HON. DEPUTY SECRETARY, HON. ASSISTANT TREASURER (*all ex Officio*)

MRS. A. K. HUNT, CDR. G. W. WATSON, F. W. WILSON, F. OLDHAM

Museum :

Chairman: W. A. BRAY

CHAIRMEN OF SECTIONS (*ex officio*)

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Library :

Chairman: W. J. MIDDLETON

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House :

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MRS. W. CHOME, MRS. B. TAYLOR

Garden :

Chairman: MRS. W. CHOME

MRS. R. C. CRANE, MRS. D. DAIN, MRS. A. K. HUNT, MRS. L. V. NICKLEN, F. OLDHAM

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Chairman: MRS. M. K. PARKINSON

MRS. T. CROMPTON, MRS. H. M. DICKINSON, MRS. E. HARDY, MISS E. HARTWELL, MRS. M. HEATON, MRS. K. LAWRENCE, MRS. M. MITTON, MRS. L. MOORE, MISS W. A. SAUNDERS, MRS. L. WHEELER

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Chairman:

MISS M. ALLEN, MRS. L. E. ANGUS-HAY, T. A. CRAWSHAW, MRS. A. DAY, MISS E. M. DUNSTAN, MRS. C. D. M. GOLDIE

Bournemouth Natural Science Society

List of Members

Revised to 31st October, 1980

* Honorary Member
v Vice-President
† Past President
L Life Member
A Associate Member

The year of election is given before the name of each member
Unless otherwise stated all addresses are in Bournemouth

1974	Adlard, Mrs. L. B.	50 Seaward Avenue, BH6 3SH
1980	Allan, Mrs. G.	29 Dulsie Road
1963	*Allen, Miss M.	174 Holdenhurst Road, BH8 8AS
1971	Allin, Mrs. J. M.	14 Oakwood Road, Highcliffe
1960	Alsford, C.	20 Church Road, Ferndown, BH22 9EU
1960	Alsford, Mrs. J. R.	" "
1955	Ambler, Mrs. A.	4 Dene Court, 18 Tower Road, Poole
1976	Ames, Dr. G. H. H., M.R.C.S., L.R.C.P., L.D.S.	C13 San Remo Towers, Sea Road
1968	Ames, W. J. C.	3 Rothesay Road, BH4 9NH
1968	Ames, Mrs. D. A.	" "
1977	Andrew, A., M.A.	F7 Pine Grange, Bath Road
1978	Andrew, Miss E.	34 Tollard Court, West Hill Road
1970	Andrews, Mrs. A.	41 James Road, Branksome, BH12 1EA
1979	Andrews, Mrs. S. C. M.	157 Alexandra Road, Poole
1970	Angus-Hay, Mrs. L. E.	9 Windermere Road, BH3 7LF
1967	LArnold, Mrs. M.	1198 Christchurch Road, BH7 6DY
1975	Ash, Miss C. C.	2 Pendennis, 7 Derby Road
1975	Athill, Col. G. J., M.B.E., F.L.W.S.P.	5 Cresta Gardens, Ferndown, BH22 8LY
1975	Athill, Mrs. J. I.	" "
1972	Atley, Mrs. C. E.	6 Solent Road, BH6 4BP
1978	Auld, Mrs. K. R.	25 Ravenscourt Road
1974	Ayles, Mrs. N.	6 Slavanka Court, 44 Belle Vue Road
1974	Ayton, D. J.	201 Kinson Road, BH10 5HB
1977	Baker, Miss J.	37 The Avenue, Moordown
1977	Ball, Miss B. M.	25a Dingle Road
1976	Ballard, E.	15 Buckingham Court, 12 Mount Pleasant Road, Poole
1966	Band, Mrs. M., M.A.	5 Boscombe Cliff Road, BH5 1JL
1970	Band, Miss E.	" "
1967	†vBanks, Sqd. Ldr. J. L. C.	Kingston, Dene Walk, Ferndown
1979	Barrett, Miss M.	1 Belmont Avenue
1979	Barrett, Mrs. J. H.	11 - 318 Poole Road, Poole, BH12 1AN
1971	LBartram, T., F.N.I.M.R., F.R.S.H., F.H.A.	6 Browning Avenue, BH5 1NN
1978	Bateson, Miss J.	8 Meadow Court, Leigh Common, Wimborne
1974	Beale, J. M., M.A.	71 Lake Drive, Poole, BH15 4LR
1974	Beale, Mrs. M. J.	" "
1972	Beckwith, W. E.	8 Cranleigh Gardens, BH6 5LE
1971	Beckwith, Mrs. I. A.	" "
1980	Bell, Mrs. A. M.	A36 San Remo Towers, Sea Road
1974	Bell, Miss D. H.	19 Gainsborough Road, BH7 7BD

1944*	†vBell, T. M., B.A., M.B., B.CH.	5a Stourwood Avenue, BH6 3PN
1976A	Bell, F. G. T.	32 Ravine Road
1963*	†vBennetts, Miss K. M., F.Z.S.	29 Belle Vue Gardens, Belle Vue Road
1978	Bennett, Mrs. J.	15 Mude Gardens, Mudeford
1979	Benson, Mrs. R.	6 Moat Lane, Barton on Sea
1980	Bentley, M. P., O.B.E., C.ENG.	5 Bournewood Drive
1980	Bentley, Mrs. E. P., A.T.D.	,, ,,
1947	Berrill, Miss M. E.	41a Cavendish Road, BH1 1RA
1967	Bettell, Miss I. M.	4 Curzon Court, 11 Portarlington Road
1972	Birkinshaw, D.	30 Lowther Road, BH8 8NG
1975	Blakeley, Dr. T. H., B.SC., PH.D.	10 Farringdon, 54 West Cliff Road
1975	Blakeley, Mrs. W.	,, ,,
1951	LBlandford, Mrs. R. I.	B18 Elizabeth Court, Grove Road
1979	Blencowe, Miss E. J.	11 Doveshill Crescent
1977	Bloodworth, H. G.	12 Gainsborough Road
1964	Blower, Miss M.	32 Selkirk Close, Merley, Wimborne
1980	Bowe, Miss D.	70 Charminster Avenue, BH9 1SE
1967	Bowers, Mrs. M. P.	24 Warren Court, 22 St. Valerie Road
1978	Bowler, F. C., B.SC.	8a Overbury Road, Poole
1980	Bradbury, Mrs. F.	21, 66 Surrey Road, BH4 9HU
1980	Bragg, Miss J. M.	2 Berkley Manor, 317 Poole Road, Poole, BH12 1AA
1969	Bray, W. A.	234 Ringwood Road, Leigh Common, Wimborne, BH21 2DE
1975	Brazell, Mrs. M.	Surrey Lodge, 16 St. Winifreds Road
1977	Brazier, Miss B.	Holly Trees, Stoford Bottom, Salisbury
1968	Brazier, Miss M. A.	4 Cedar Avenue, BH10 7EF
1980	Britton, Miss I. B.	5 Thornley Road, BH10 6DZ
1971	Broadway, Mrs. V. M.	A23 San Remo Towers, Sea Road
1970	Brooks, J. L.	7 Milton Road, Wimborne, BH21 1NY
1970	LBrooks, Miss M. M., PH.C., M.P.S., F.R.S.H., F.R.E.S.	,, ,,
1978	Brotherton, Miss H. J., J.P.	58 Pearce Avenue, Poole
1937(1967)	†vBrown, S. C. S., F.D.S., R.C.S., L.D.S.	158 Harewood Avenue, BH7 7BG
1962	Brown, Miss V. C.	9 Laverstock, Boscombe Cliff Road
1973	Buckland, R. C.	127 Overcliff Drive, Southbourne
1969	Buckland, Mrs. E.	,, ,,
1977	Burrows, Mrs. B. A.	70 Redhill Drive
1930	Bury, Miss G. J.	10 Rossley Close, Christchurch
1973	Butcher, Mrs. C. E	10 Victoria Gardens, Fordingbridge
1977	Butcher, Mrs. M.	32 Dudsbury Avenue, Ferndown
1977	Butt, Mrs. J. M.	6 Dingle Road
1979	Butters, Mrs. R.	D5, 35 Christchurch Road
1979	Byrne, Dr. N. J., B.A., B.SC., PH.D.	33 Chatsworth Road, Poole
1979	Byrne, Mrs. S. B.	,, ,,
1967	Cady, Mrs. L.	108 Alexandra Road, Poole, BH14 9EP
1979	Campbell, Mrs. M. A.	22 Cheam Road, Broadstone
1964	Cartwright, Miss D. E., M.B.E.	31 Wistaria House, Redhill Drive
1974	Capper, Dr. K. R., PH.D., F.P.S.	10 Kenilworth Court, Western Road, Poole
1975	Capper, Mrs. J., M.P.S.	,, ,,
1977	Chaney, H. L., F.R.I.C.S., F.A.I.	72 Parkstone Avenue, Poole
1977	Chaney, Mrs. I.	,, ,,
1974	Channon, W. V. K.	36 Studland Road, BH4 8JA
1974	Channon, Mrs. P. G.	,, ,,
1942	*Chomé, Mrs. W.	3 Sandykeld, 26 Manor Road
1968	Clamp, Miss D.	6 Hengistbury Road, Barton-on-Sea
1974	LClapton, Miss D. E.	1 Alington, 25 Marlborough Road, BH4 8DE
1976	Clarke, Mrs. D. E	23 Victoria Gardens, Fordingbridge
1977	Clasby, P. S.	12 Haglane Copse, Lymington

1963	LClode, J. C.	32 Western Road, Chandlers Ford
1973	Clode, Mrs. V. M.	" "
1977	Coates, Miss J., B.A.	7 Surrey Lodge, 19 Surrey Road
1977	Coates, Miss L., B.A.	" "
1958	*Cocke, M. H.	St. Ives House, Horton Road, St. Ives, Ringwood
1975	Cole, Mrs. J.	34 Little Forest Road
1979	Coles, Mrs. M. F.	80 Blandford Road, Poole
1972	Collier, Miss D.	12 Queenswood Avenue, Queens Park
1971	Collinson, Miss M.	57 Stour Park, New Road
1975	Constant, Mrs. A.	59 De Lisle Road, BH3 7NG
1970	Cooke, F. W.	14 Meadow Close, Ferndown, BH22 8RN
1941	LCooper, Mrs. E. M.	B18 Elizabeth Court, Grove Road
1976	Copp, Mrs. V. E.	84 Brackendale Road
1971	Cotton, Dr. W. J., B.A., B.M., B.CH.	37 Cedar Manor, 19/21 Poole Road, Poole
1971	Cotton, Mrs. K.	" "
1972	Cousins, Mrs. A.	51a Newstead Road, BH6 3HL
1978	Cowan, Miss A. F.	14 The Lawns, Waterford Rd., Highcliffe
1956	LCox, Miss M. G. E.	4 The Maitlands, 8 Portarlington Road
1973	Crane, Mrs. R. C.	9 Vinneys Close, Burton
1980	Craig, Dr. A. C., B.SC., M.B., C.M.B.	27 Lindsay Park, Lindsay Road, Poole
1980	Craig, Mrs. M.	" "
1973	†vCrawshaw, T. A., F.M.INST.M.C.	D4 Exbourne Manor, 37 Christchurch Rd.
1972	Crawshaw, Mrs. F. M.	" "
1977	Crompton, Mrs. J. E.	148 Evering Avenue, Poole
1977	Croad, Mrs. H. S.	Rivercroft, Spetisbury, Blandford
1975	Curtis, Mrs. B.	114 Cutlers Place, Wimborne
1975	Dain, F.	111 Bader Road, Canford Heath, Poole
1975	Dain, Mrs. D.	" "
1976	Davis, Mrs. B.	5 Athelney Court, 24 Grove Road
1979	Davis, Mrs. M.	D11 San Remo Towers, Sea Road
1979	Davis, Miss M. W. S.	26 William Road
1979	Davies, Miss E. L.	15 Amberley Court, Bath Road
1979	Davies, Dr. S. L., B.A., B.B.CH.B.	Royal Victoria Hospital
1964	Day, Mrs. A.	15 Bosley Way, Christchurch, BH23 2HF
1967	Deacon, Miss M. G. K.	42 Belmont Road, Poole, BH14 0DB
1975	Denison, Mrs. N.	36 Bryanstone Road, BH3 7JF
1980	Diamond, J. B., B.SC.	121 Norton Road
1980	Dickinson, Mrs. M. A.	E21 San Remo Towers, Sea Road
1975	Dickinson, Mrs. H M.	9a Moorland Road
1978	Dixon, Miss D. M.	26 Bourne Pines, Christchurch Road
1977	Dominy, J. N.	52 Blakehill Crescent, Poole
1977	Dominy, Mrs. B. J	" "
1972	Dolamore, Mrs. M.	15 Dene Walk, Ferndown
1973	Donnelly, J. F.	3 Buce Hayes Close, Highcliffe
1973	Down, Mrs. A. M.	62 Huntly Road
1980	Downes, J. P.	10 Leslie Road, BH9 2JH
1970	Draper, G. S.	44 Brackendale Road, BH8 9JA
1970	Draper, Mrs. O. G	" "
1979	Dring, Miss F.	25 Wortley Way, Ferndown
1977	Drover, E. C.	33 Lindsay Manor, 47 Lindsay Rd., Poole
1953	Dudley, D. J.	17 Widdicombe Avenue, Poole
1955	Dudley, Mrs. I.	" "
1972	Dunfee, Miss E. G.	5 Barton Drive, Barton-on-Sea
1975	Dunstan, Miss E. M.	21b Alumhurst Road
1978	Eames, K. M., F.C.A.	152 Cranleigh Road
1978	Eames, Mrs. I. L.	" "

1967	Earl, Mrs. J. C.	10 Merrifield Drive, Broadstone
1974	Easterbrook, L.	4 The Pines, 38 The Avenue, Poole
1974	Easterbrook, Mrs. F. P.	,, ,,
1979	Eaton, W. A.	9 Queens Park Avenue
1979	Eaton, Mrs.	,, ,,
1965	v*Edwards, Brig. A. B. D., C.B.E., M.C.	234 Burlington Hotel, BH5 1AD
1979	Edwards, H. L., A.M.INST.E.	1 Crescent Court, The Crescent
1979	Edwards, Mrs. E.	,, ,,
1979	Elgood, J. H., M.A.	26 Walkford Way, Highcliffe
1979	Elgood, Mrs. M. L.	,, ,,
1963	Elliott, Mrs. D.	85 South Road, BH1 4PB
1979	Elliott, Miss M.	7 The Grove, Christchurch
1976	Erskine, S. L. W., M.D., D.PH.	16 Oakwood Road, Christchurch
1976	Erskine, Mrs. K. M.	,, ,,
1955*	†vExton, Miss F. M., B.A.	4 Worthington Crescent, Poole
1960	Exton, Miss J. M.	,, ,,
1980	Falconer, Mrs. I.	3 Brookside Park, Corfe Mullen
1976	Farrell, Miss C.	7 Fortescue Road
1953	LFarwell, Mrs. S. M. A.	Latch Farm, Fairmile, Christchurch
1977	LFewkes, Miss M. H.	175 Belle Vue Road
1980	Field, Mrs. M.	172 Lake Road, Hamworthy, Poole
1965	Fildes, Mrs. E. M.	45 Wickfield Avenue, Christchurch
1976	Fisher, G.	36 Burnham Drive
1976	Fisher, Mrs. N.	,, ,,
1980	Fitzroy-Simmons, A. S.	1 Riviera Court, Suffolk Road, BH2 5SY
1980	Fitzroy-Simmons, Mrs. G. M.	,, ,,
1965	Foley, Miss E.	40 Barton Court Road, New Milton
1975	Ford, Mrs. J.	43 Belle Vue Gardens, Belle Vue Road
1979	Forrest, L. G.	30 Meyrick Court, St. Winifred's Road
1970	French, Mrs. H. M.	1 Parkview, 16 Braidley Road
1975	Gardiner, J. A.	49 St. Catherines Road, BH6 4AQ
1978	Gaston, A. E.	21 Chessel Avenue
1980	Genge, R. G.	3 Linden Road, Romsey, SO5 8DA
1974	George, W. L.	8 Glendale Close Wimborne
1974	George, Mrs. J.	,, ,,
1979	Gibbons, G.	173a Stewart Road
1977	Gibson, Mrs. J. G., M.B.E.	141 Burlington Hotel, Owls Road
1972	Gillett, Miss M. M A.	16 Talbot Avenue, BH3 7HX
1980	Glass, A.	6 Horseshoe Court, Dean Park Road
1980	Glass, Mrs. P.	,, ,,
1963	Goldie, Mrs. C. D. M.	1 Byeways, 8 Brudenell Avenue, Poole
1977	Grant, P. S., F.I.E.E.	15 The Maltings, 43 Parkstone Rd., Poole
1977	Grant, Mrs. F. M.	,, ,,
1953	Gray, Miss E.	44 Edmondsham House, Terrace Road
1977	Gray, Mrs. J. F., B.A.	62 Dulsie Road
1977	Green, E. G.	14 Jessop Road, Wimborne
1977	Green, Mrs. F. A.	,, ,,
1977	Green, Mrs. W.	12 Marsh Court, Clifton Road
1979	Greenwood, Mrs. A. M.	200 Harewood Avenue
1973	Griffiths, Mrs. R. A.	C23 San Remo Towers, Sea Rd., BH5 1JT
1975	Grossert, A.	Mainstone House, Romsey, SO5 0BA
1973	Gunter, Mrs. R. B.	13 Annerley Road, BH1 3PG
1978	Guscott, W. J., C.ENG., F.I.E.E.	7 Wick Lane
1978	Hadfield, W., O.B.E., M.A., M.I.E.E.	Applegarth, Orchard Avenue, Windsor
1971	Hall, J. O.	36 Keith Road, BH3 7DU
1971	Hall, Mrs. D. M.	,, ,,

1975	Hallam, Mrs. M.	25 Darby's Lane, Poole
1972	Hanna, H. J. A.	6 Cliffe Road, Barton-on-Sea
1971	Hanna, Mrs. K. A., M.A.	" "
1980	Harding, Miss M.	19 The Chantry, Madeira Road
1972	Harding, R.	3 Porchester Place, BH8 8JS
1976	Hardy, W.	1 Gorsecliff Court, 5 Boscombe Spa Road
1976	Hardy, Mrs. E.	" "
1978	Harwood, R. E.	10 Blakehill Crescent, Poole
1978	Harwood, Mrs. A. M.	" "
1976	LHartwell, Miss E. I.	32 Parley Road
1961	Harvey, Mrs. F. E., M.B., CH.B.	C21 San Remo Towers, Sea Rd., BH5 1JT
1964	Hatton, R. H. S., M.A.	Pine Cottage, Lower Rowe, Holt
1973	Hayball, Miss G.	Flat 21/29-33 Bournemouth Road, Poole
1969	Hayter, Miss E.	38 Edgehill Road, BH9 2PQ
1972	LHealey, Mrs. R.	5 Leven Avenue, BH4 9LH
1971	Heaton, Mrs. M. I.	8 Mayfair, 74 Westcliff Road, BH4 8BG
1975	Heath, G. W.	3 Wyndham Road, Parkstone
1975	Heath, Mrs. M. R.	" "
1979	Hermon, L.	4 St. Anthony's Road
1979	Hermon, Mrs. A. E.	" "
1977	Hight, Mrs. I. E.	55 Rothesay Drive, Highcliffe
1973	Hilton, J.	9 South Hill Grove, Harrow, Middx.
1973	Hilton, Miss M. L., B.SC., PH.D.	" "
1962	*Hipperson, Miss M.	69 Headswell Avenue, BH10 6JZ
1974	Hoar, Miss K.	159 Fairmile Road, Christchurch
1979	Hodgetts, Mrs. E. P.	4D, 35 Christchurch Road
1960	*Holbrook, H. S., B.SC., C.ENG., F.I.E.E.	49 St. Catherines Road
1972	Holder, F. H.	105 Northfield Road, Ringwood
1972	Holder, Mrs. A. R.	" "
1974	Holmes, Mrs. H. N.	4 Chepping Dene, 15 Wimborne Road
1961	*LHooton-Smith, Mrs. B. E.	4 Iddesleigh Road
1978	Hopwood, Mrs. J.	44 Verwood Crescent
1979	Horley, Mrs. M.	2 Waverley, 25 Grosvenor Road
1979	Hortop, J. R.	1 Priory Gardens, Spetisbury
1980	Huggins, S.	33 Hartley Down, 60 Christchurch Road, BH1 3PJ
1954*	†VLHunt, Mrs. A. K., B.SC.	Flat 1, 5 Alton Road, Poole
1979	Hyde, R. A.	7 Coy Pond Road, Poole
1979	Hyde, Mrs. B. F.	" "
1977	Jamison, S. E., PH.D.	22 Quarry Chase, 30 Poole Road
1980	Jamison, Mrs. B.	" "
1975	Jardine, Rev. D. E. C., M.A., DIP.THEOL.	St. Saviours Vicarage, Colemore Road
1972	Jarrold, Miss C. W.	4 Stanley Court, Brunstead Road, Poole
1945	Jenkins, Miss P.	School Cottage, Hinton, Christchurch
1976	Jenkins, Miss C.	1 The Links, Queens Park West Drive
1979	Jones, Miss M. B.	27 St. Lukes Road
1979	Jones, Miss H., B.SC.	" "
1980	Jenkinson, A. G.	4 Warren Edge Road, BH6 4AU
1980	Jenkinson, Mrs. I. M.	" "
1980	Jessop, Wing-Comdr. L. A., O.B.E.	21 King's Park Road, BH7 7AE
1980	Jessop, Miss O. G.	12a St. Augustin's Road
1978	Jones, M. D.	2 Earley Gate, Whiteknights Rd., Reading
1976	Jordan, L. E.	18 Braidley Road
1976	Jordan, Mrs. V. M.	" "
1978	Joseph, S. B., A.MUS., T.C.L.	1/31 Knole Road
1979	Kemp, Mrs. D. F.	68 The Avenue, Moordown
1970	Kent, H. M., B.SC.	62 Canberra Road, Christchurch
1970	Kent, Mrs. M.	" "

1977	Keohane, Mrs. C. M.	16a Princess Court, Princess Road, Poole
1968	Kernot, Miss F. L.	5 Queens Park Road, BH8 9BP
1977	Kirkpatrick, F. B	74a The Avenue, Moordown, BH9 2US
1977	Langford, H. H. C.	8 Gordon Court, 38 Surrey Road
1980	Laughrin, I. G.	46 Smugglers Lane North, Highcliffe
1980	Laughrin, Mrs. H. M.	" "
1979	Lawrence, H.	82 Wolverton Road
1979	Lawrence, Mrs. K.	" "
1979	Leapman, P. E., M.P.S.	39 Manor Road
1979	Leapman, Mrs. P. G.	" "
1970	Ledger, A. L.	7 Albemarle Road, BH3 7LZ
1979	Lee, D. C., C.B.E.	73 Newstead Road, BH6 3HC
1979	Lee, Mrs. W.	" "
1966	v†Lee, W. H.	18 Ravenshall, West Cliff Road, BH4 8AT
1967	Lee, Mrs. L. B.	" "
1975	Lees, R. G.	25 Thornbury Road, BH6 4HS
1976	Lilly, G. W.	78 St. Lukes Road
1970	Lilly, Mrs. P.	" "
1975	Lister, Dr. M., M.SC., PH.D.	6 Katterns Close, Christchurch
1979	Louwes, H.	112 Admirals Walk, West Cliff Road
1979	Louwes, Mrs. E. B	" "
1934*	†vLowther, Miss D. M., B.SC.	15 Mayfield Avenue, Poole
1976	Lund, Mrs. M. S.	8 William Road
1969	McAlpine, Miss G., B.A.	10 Western Avenue, Barton-on-Sea
1956	McClay, H., M.S.M., A.C.I.I.	6 Fountain Court, Durley Gardens
1958	McClay, Mrs. D. G.	" "
1974	McMullin, Mrs. E G.	151 Burlington Hotel, Owls Road
1973	Maddox, C. B. M.	31 Egerton Road, BH8 9AY
1956	Maddox, Mrs. L. M.	" "
1978	Mann, C. W.	9 Endfield Close, Christchurch
1978	Mann, Mrs. M.	" "
1970	Mansfield, Mrs. F. M.	28 Barrie Road
1977	Marcroft, Mrs. R. M.	4 Heatherlea Road
1946	Marshall, Miss D.	76 Palace View, Bromley, Kent
1978	Martin, Mrs. D.	30 Hull Road
1975	Martin, Miss H. F.	16 Sandbourne Road
1967	Martin, F. B., F.C.I.I.	C25 San Remo Towers, Sea Rd., BH5 1JT
1979	Mason, Mrs. P. M.	51 Durrington Road
1978	Mayer, F. A.	Teal Cottage, Windmill Lane, Ringwood
1976	Merchant, Miss J. M.	4 Marlborough Court, Marlborough Road
1973	Merry, Mrs. H. E	10 Victoria Gardens, Fordingbridge
1975	Michael, T. N.	13 Herberton Road
1975	Michael, Mrs. M.	" "
1956	Middlemast, A. H.	86 Hengistbury Road, BH6 4DJ
1964	Middleton, W. J.	74 Compton Avenue, Poole
1979	Millar, P.	6 Bentley Road
1979	Millar, Mrs. P.	" "
1976	Mills, W. G. Q., M.B., B.CH., F.R.C.S.	66 Blake Hill Crescent, Poole
1959	v*Mitton, J. C.	3 Gainsborough Road, BH7 7BD
1970	Mitton, Mrs. M.	" "
1972	Moore, W. H.	13 Eldon Road, BH9 2RT
1973	Moore, Mrs. L.	" "
1979	Morris, Mrs. B. M.	4 Westcliff House, 45 Westcliff Road, BH4 8AZ
1973	Morris, T. E.	Sandpit, Frogham Hill, Fordingbridge
1973	Morris, Mrs. J. F	" "
1973	Nash, G., M.A., F.R.A.S.	3 Charmouth Grove, Poole
1974	Nicklen, E. W.	77 Holdenhurst Avenue, BH7 6RB
1967	Nicklen, Mrs. L. V.	" "

1979	Noble, H., B.PHARM.F.P.S.	7 Studland Court, 29 Marlborough Road, BH4 8DF
1979	Noble, Mrs. D. A.	" "
1968	Noll, Miss C. F.	2 Pinecliff Avenue, BH6 3PZ
1977	North, Miss J. L.	12 Littledown Avenue
1977	Norvall, Miss A. C.	23 Exton Road
1979	Noyes, Mrs. M. I.	40 Bourne Court, 44/46 Christchurch Rd.
1980	Norton, R. J. P.	6 Leven Close
1979	O'Connor, T.	48 Knyveton Road
1957	Odell, Mrs. G. C.	4 Barclay Mansions, St. Valerie Road
1970	Offen, E. C.	4 Ranelagh Road, Highcliffe, Christchurch
1970	Offen, Mrs. M. J.	" "
1950	†vOgle, Miss U. M.	2 Frankland Crescent, Poole
1980	Olden, Mrs. S. E. E.	56 Petersfield Road
1971	†vOldham, F., J.P., M.A., B.SC., F.INST.P.	19 Dingle Road, BH5 2DP
1975	O'Neill, Miss G. E.	15 The Chantry, Madeira Road
1975	Ottley, Miss M. C.	7 Mount Heatherbank, Richmond Gardens
1972	Ottley, P. W., C.ENG., M.I.E.E.	5 Webbs Close, Ashley Heath, Ringwood
1979	Pallett, Miss B.	215 Sandbanks Road, Poole
1979	Palmer, Miss D. I.	49 Columbia Road
1970	Parish, D.	5 Venator Place, Munster Park, Wimborne
1970	Parish, Mrs. F. M.	" "
1977	Parkin, L. V.	87 Portland Road
1969	LParkinson, J. G.	45 Belle Vue Road, BH6 3DF
1969	LParkinson, Mrs. M. K.	" "
1971	Pawson, Miss K. M.	39 Queen Mary Avenue, BH9 1TT
1963	Payne, Miss H. I.	83 St. Luke's Road, BH3 7LS
1980	Pearce, A. A.	Westfall, The Hollow, Child Okeford, DT11 8EX
1980	Pearce, Mrs. B.	24 St. Albans Avenue, BH8 9EE
1916	*LPenrose, Miss F.	Little Picket, Hightown, Ringwood
1963	Perry, W. F., B.SC.	117 Portland Road, BH9 1NG
1953	*Pickering, V. T.	38 Westby Road
1977	Plummer, Mrs. G.	33 Branksome Hill Road
1979	Pollock, Mrs. J.	57 Mount Pleasant Drive
1980	Poupard, W. W.	1 Centenary Court, 19 Burton Rd., Poole, BH13 6DT
1980	Poupard, Mrs. J. R.	" "
1971	Price, Miss E.	9 Windemere Road, BH3 7LF
1973	Puckett, Mrs. M.	47 Somerley Road, BH9 1EN
1967	Purdy, Mrs. K. M.	158 York Road, Broadstone
1976	Purnell, Miss E. J.	70 Belle Vue Gardens, Belle Vue Road
1979	Putt, E. J.	274 Iford Lane
1979	Randall, Mrs. C.	3 Redhill Close
1975	Rotcliffe, G. L., F.C.A.	4 Woodland Avenue
1975	Ratcliffe, Mrs. M. N.	" "
1980	Ratray, W. J., C.ENG.	26 Dereham Way, Poole
1980	Ratray, Mrs. S.	" "
1980	Raymond, Miss A.	11 Borehamd Road, BH6 5BW
1978	Read, Miss E.	1 Villa Marina, 12 Boscombe Cliff Road
1978	Read, Miss M. S.	" "
1951	LRead, Mrs. H. A.	15 Carbery Avenue, BH6 3LL
1978	Reed, Mrs. J. M.	37 Braidley Road
1980	Reeve, Mrs. M.	32 Naseby Road
1979	Renshaw, Mrs. M. E.	5 Southwick Place
1949	Robertson, Mrs. M.	15 Charminster Avenue
1977	Robins, W. O., A.R.I.C.S.	85 Petersfield Road
1979	Robins, Mrs. F. V.	" "

1979	Robinson, A. W., A.R.I.B.A.	86 Warnford Road
1979	Robinson, Mrs. M.	" "
1980	Robinson, E. T. W., M.A., F.R.G.S.	9 Heath Farm Close, Ferndown
1980	Robinson, Mrs. E. F. S.	" "
1967	Rosemond, S. J., F.I.L.	c/o National Westminster Bank, 27 Old Christchurch Road
1963	LRossiter, Mrs. D. M.	5 Park Homer Road, Colehill, Wimborne
1970	Rowe, Miss L. M.	23 The Bluff, Headswell Crescent
1967	Russell-Cotes Art Gallery	East Cliff, Bournemouth
1975	Rust, Mrs. P.	95 Holdenhurst Avenue, BH7 6RB
1970	LRuston, J. R.	Flat 1, 3 Moorland Road, BH1 3ST
1977	Sainty, Miss C. M., B.A.	134 Castlemain Avenue
1980	Saunders, Miss B. A.	Dormer Cottage, Gaunts Common, Wimborne.
1975	LSaunders, Mrs. M. W.	2 Memorial Homes, Castle Lane
1954	Saunders, Miss W. A.	10 Duncliff Road, BH6 4LJ
1970	Scott, S. A.	6 The Close, Charlton Marshall, Blandford
1976	Scutter, Mrs. L. M.	12 Oakwood Road, Highcliffe
1960	*Sephton, Mrs. N., M.B., CH.B.	1/4 Talbot Avenue, BH3 7HU
1951	Sewell, Mrs. I.	4 Maunderville Crescent, Christchurch
1977	Shannon, Mrs. F. M.	3 Surrey Gardens
1977	Sheldon, J. L., B.SC.	53 Steepdene, Poole
1979	Sheperd, Miss N.	2D, 35 Christchurch Road
1971	Sherrington, Miss D.	57 Gladstone Road West, BH1 4HZ
1968	Shewell, Capt. A. V.	F10 Pine Grange, Bath Road
1980	Shewring, Miss E. M.	9 The Anchorage, 157 Mudeford, Christchurch
1980	Short, R. J.	19 Penrith Road, BH5 1LT
1980	Siggs, D.	18 Parkstone Avenue, Poole, BH14 9LR
1980	Siggs, Mrs. N. C.	"
1971	Simmons, W. F.	166 Shelbourne Road, BH8 8RA
1971	Simmons, Mrs. G. L.	" "
1976	Simmons, Miss I.	4 Hampshire House, 37 Cavendish Road
1980	Simmonds, Mrs. M. C.	12 Knoll Manor, St. Valerie Road
1979	Smith, A. D. W.	108 Alexandra Road, Poole
1970	Smith, G.	1 Beechwood Lodge, 24 Portarlington Rd.
1970	Smith, Mrs. G. M.	" "
1979	Smith, S. F.	44 The Grove, Moordown
1979	Smith, Mrs. E. H.	"
1973	Smith, Miss V. H.	15 Belle Vue Gardens, Belle Vue Road
1976	Sorton, Mrs. A. L. E., B.A.	5 Admirals Walk, Westcliff Road
1975	Souter, Miss E. E.	1A The Croft, Warren Edge Road
1971	Southworth, T. C., O.B.E., B.SC.	15 Chine Crescent Road, BH2 5LG
1971	Southworth, Mrs. N. K. G., M.A.	" "
1976	Sparkes, G., M.I.E.E.	68 Clingan Road
1976	Sparkes, Mrs. M.	" "
1979	Stanley, Mrs. V. N	13 Bourne Court, Bourne Avenue
1976	Starkey, Miss V. E.	C36 San Remo Towers, Sea Road
1979	Stearn, N. S. J.	18 The Anchorage, 157 Mudeford
1969	Stephens, Mrs. G. B.	24 Cavendish Road, BH1 1RF
1980	Stinton, W. A., F.R.G.S., F.G.S.	1 Roslin Road, BH3 7JA
1980	Stinton, Mrs. D. B.	"
1976	Stocker, Miss M., B.A.	21 Amberley Court, Bath Road
1973	Stone, Miss M. G., B.A.	134 Castlemain Avenue, BH6 5ER
1957	Strain, W. S., M.A.	65 Farm Lane North, Barton-on-Sea
1979	Street, Miss C.	18 Broughton Close
1979	Street, Miss W.	" "
1975	Sutherland, A., F.L.A.	College Library, Wallisdown
1980	Sykes, J. R.	32 Durrington Road
1979	Taconis, Miss R. M.	78 The Grove, Christchurch
1955	Taylor, Mrs. B.	164 Belle Vue Road, BH6 3AH

1980	Taylor, F.	38 Hillbrow Road
1979	Taylor, Mrs. M. M.	,, ,,
1967	†vTeasdill, G., F.M.A., F.R.S.A., F.R.N.S., F.Z.S.	99 Carbery Avenue, BH6 3LP
1967	Teasdill, Mrs. N. A.	,, ,,
1977	Thomas, Mrs. S.	106 Sopwith Crescent, Wimborne
1965	vThomas, W. C.	Flat D, Laverstock, Boscombe Cliff Road
1965	†vThomas, Mrs. G. M., M.A., B.LITT.	,, ,,
1979	Thomas, Mrs. W. P.	92a Howeth Road
1970	Tipper, Miss N.	6 St. Michael's Flats, Cambridge Road
1978	Timfs, Miss M.	11 The Conifers, The Avenue, Poole
1965	Todd. Miss E. C.	Flat A, Pendennis, 7 Derby Rd., BH1 3PU
1976	Tompkins, R. J.	167 Richmond Park Road
1975	Towndrow, Mrs. I.	4a Hankinson Road
1973	LTrevor-White, J.	3/40 Tower Road, Poole
1977	Tuck, Mrs. L. K.	18 Toft Mansions, Manor Road
1976	Upson, A.	4 Ryan Close, Ferndown
1976	Upson, Mrs. O.	,, ,,
1974	Wall, T. R.	17 St. Mary's Road, Ferndown
1961	Wallace, Miss J. B., B.SC.	10 St. Ives Park, Ringwood
1980	Warburg, Mrs. A. M.	11 Katterns Close, Christchurch
1977	Watson, F. R.	79 Brackendale Road
1976	Watson, Comm., G. W., C.ENG., M.I.(MECH)E., F.I.R.A.S.	17 Wimborne Road
1976	Watson, Mrs. H. M.	,, ,,
1977	Webster, C. J.	4 Chewton Common Road, Highcliffe
1977	Webster, Mrs. B. J.	,, ,,
1975	Webster, Miss S. C., B.ED.	,, ,,
1979	Westbrook, Mrs. S.	15 Wheelers Lane, Bearwood
1970	LWheeler, H. P.	47 Belle Vue Road, BH6 3DD
1970	LWheeler, Mrs. L.	,, ,,
1978	Whitsed, W. J., F.R.S.A.	41 Feversham Avenue, BH8 9NW
1980	Wildman, W. W.	8 Wessex Road, Poole
1976	Williams, Mrs. H., B.A.	5 Ravenscourt Road
1977	Williams, J.	73 Wareham Road, Corfe Mullen, Wimborne
1979	Williams, J.	16 Mildenhall, West Cliff Road
1979	Williams, Mrs. W. M.	,, ,,
1979	Williams, Mrs. M.	76 Huntly Road
1977	Williams, Mrs. M. R.	102 Belle Vue Road
1980	Wills, Mrs. J.	8B Exbourne Manor, 37 Christchurch Rd.
1980	Willson, Miss E. D.	50 Charminster Avenue, NH9 1SB
1972	*Wilson, F. W., F.C.I.S.	9 Pascoe Close, Poole
1972	Wilson, Mrs. E. M.	,, ,,
1976	LWinter, Mrs. A. R.	10 Lakeside Road, Branksome Park
1979	Winter, Miss P. E., M.A.	7 Broadway
1979	Winter, Miss R. H. D.	,,
1948	Wood, Miss E. B., B.SC.	4 New Park Road, BH6 5AB
1971	LWood, Mrs. D. L.	6 Crofton Court, 37 Wellington Road
1980	Wood, Miss F.	16 Harcourt, Derby Road, BH1 3PZ
1949*	†vWray, Dr. D. A., M.A., PH.D., F.G.S.	14 Grove Road, Barton-on-Sea
1975	LWrenn, G.	99 The Avenue, Moordown
1980	Wrenn, Mrs. M.	,, ,,
1978	York, Miss B.	3 Bell Moor, 1 Portarlington Road
1977	Young, Mrs. M. E., B.SC.	67 Orchard Avenue, Poole
1979	Yuill, Mrs. T. O.	15a Newstead Road

Obituaries

It is with deep regret that we have to announce that during the past year the following members have died (the figures in brackets is the year of joining the Society): —

Eric E. P. Chomé (1951)
Dr. W. Down (1978)
W. Watkins (1976)
Mrs. M. G. Shaw (1976)
Miss E. F. Balfour-Browne (1962)
Mrs. E. Charter (1959)
F. A. Alderton (1975)
W. H. Hunt (1957)
Mrs. I. Legge (1966)

ERNEST CHAMBERS, F.L.S.

The death of Ernest Chambers on 14th July, 1979 at the age of 93 marked the end of a long and interesting life. He was proud of being a true Yorkshire man, having been born and bred in York where his education was at what was then termed a "Board School". At one time he was on the staff of the Botanical Supply Association at Aberystwyth and later he joined the firm of Terry's Chocolates, and worked for them on their plantations in South America.

On retirement he settled in Bournemouth and joined the Bournemouth Natural Science Society where, as he was proud to relate, he was almost immediately made Chairmen of Botany, a post which he held for twelve years, giving over 100 lectures and organising or leading many meetings in the field.

In the early '50's he suffered great pain from arthritis of the hip and was one of the first to have the operation for replacement of the joint, when this operation was still in the experimental stage.

He was elected President of the Society in 1951 and again in 1969, an honour bestowed on few of the Society's members.

He is affectionately remembered by those of us who knew him, as one of the Society's 'Grand Old Men'.

Presidential Address

Insects - Friends or Foes?

by MISS M. M. BROOKS, Ph.C., M.P.S., F.R.S.H., F.R.E.S.

Delivered before the Society on the 11th October, 1980

The subject of this address is the inter-relationship between the human race and the Insects, and whether Man can consider the Insects to be his allies or his enemies.

Insects and related arthropods preceded Man on earth by a very considerable time—they came into being over 350 million years ago, during the Paleozoic era. Today there are over a million known species, and doubtless many others still to be discovered. Their position in the pattern of life on this planet is a very vital one, and without the insects, many plants and animals would cease to exist.

Let us consider first some aspects of the relationship between insects and the plant kingdom. The prime association of mutual benefit between insects and plants is the act of pollination, and this is carried out by many types of insects, including flies, moths, butterflies, beetles, and wasps. The best known pollinator is, of course, the honey bee, which not only pollinates the flowers, thereby ensuring the continuation of the plants, but provides Man with honey and beeswax. The association between the human race and the honey bee goes far back into time—the Egyptians had beehives 5000 years ago. The honey bee can now be considered as a true domestic animal.

An example of a vital pollinator from the New World is the Pronuba Moth, which is essential to the reproduction of the Yucca plant. The female moth lays her eggs in the ovary of the Yucca flower and then pollinates it by gathering a ball of pollen and placing it on the stigma. The moth larva feeds on the resulting seeds—but more seeds are produced than the larva requires, thus ensuring the continuation of the plant.

The Fig Wasps (*Agaonines*) have a remarkable symbiosis with fig trees. The fig tree has tiny internal flowers which are found inside the young fruit. The female fig wasp enters one of these young fruits, and inserts eggs into some of the flowers of the wild fig tree (*Caprificus*). These flowers become modified into galls, thus providing food for the wasp larvae, which eventually pupate therein. When a male wasp hatches, it emerges from its gall, and searches until it finds another containing an emerging female. It gnaws a hole in the wall of the gall, and mates with her through the wall. The fertilised female emerges through the top of the flower, being brushed with pollen as she does so, then burrows out of the fruit. She flies to fruits on other trees, bores into them to lay her eggs, and so pollinates the flowers. Cultivated fig trees were developed from the wild trees. The Smyrna Fig will only produce edible fruit when it is pollinated with pollen from a wild fig, and this is done only by the fig wasp. The female visits the flowers of a cultivated tree while looking for a place to lay her eggs, but her ovipositor is too short—it is only effective on the flowers of the wild fig—but during her visit she pollinates the

cultivated fig flower. When Smyrna Figs were first brought to countries like the United States, no fruit was produced until wild figs and the fig wasps were brought in.

About half of all known insect species feed on living plant tissue at some stage of their life cycle. However, the contest is not entirely one-sided—about 450 species of carnivorous plants feed on insects. Man has derived considerable benefit from some of the plant feeding insects. A notable example is that of *Bombyx mori,* the Silkworm—whose larva feeds on Mulberry leaves, and whose cocoon forms the source of the silk thread. The Silkworm was cultured in China as early as 2600 B.C., and the production of silk was a closely guarded monopoly—capital punishment was the penalty for exporting living material. In the 4th century, a Chinese princess married into a family of Buchara, which was then the great Islamic cultural and trade centre, and when she arrived from China, she had concealed in her headdress some Silkworm eggs. Silk production then began in Buchara, and descendents of the original Chinese livestock were taken to Rome by the Emperor Justinian. Today the cocoons of several other species of silkmoths are also used to produce silk, but it cannot match the quality of that produced by the Silkworm.

Among other plant-feeding insects which are or have been of benefit to Man are *Dactylopius coccus,* feeding on Prickly Pear cacti, and producing the edible dye Cochineal. This provided the staple industry of Tenerife, in the Canary Islands, for many years, and was abandoned only after the introduction of the Aniline dyes. The Tamarisk Manna Scale sucks the tissues of Tamarisk bushes, and produces a honeydew which has been used as a foodstuff, and which may have been the Manna mentioned in the Bible. Shellac, used in furniture polishes, is made from the secretions of the Indian Lac insect, *Laccifer lacca.*

Gardeners and commercial growers nowadays wage a constant war against insects which damage or destroy crops. Perhaps the most well-known of these pests are the Aphids, which occur in a variety of colours and cause severe damage to plants by sucking sap, thereby crippling and weakening the plant, and often causing the spread of plant virus diseases. They do produce a sticky secretion—honeydew—which provides food for some other species of insects, such as ants. Some species of butterflies live almost exclusively on this secretion. The aphids themselves provide a source of food for Ladybirds and their larvae, for Hoverfly larvae, and for some birds. Earwigs also eat aphids, but are very destructive to plants, as are Whiteflies, Scale insects, and Thrips. Wasps cause severe damage to fruit crops, and Colorado beetles affect potatoes. Butterflies are not normally considered harmful to crops, but there are exceptions. The larvae of the Large and Small Whites eat cultivated Brassicas, the Painted Lady can damage artichoke crops, the Long-tailed Blue will attack green peas, and numerous tropical and sub-tropical Swallowtails can be serious pests of Citrus orchards. Moths are much more destructive to garden produce, and harmful species include the Pea moth, Codling moth, Cabbage moth, and the Swift moth whose larvae destroy the roots of a great number of garden plants. Other insects affecting roots are wireworms, cabbage root fly, carrot fly, and vine weevils. Soft fruit is

prone to attack also: — raspberry beetles can render a large percentage of the crop unusable.

The most notorious destroyer of plant life is surely the Locust. It was one of the plagues of Egypt—"The locusts went up over all the land of Egypt, and rested in all the coasts of Egypt . . . . they covered the face of the whole earth, so that the land was darkened: and they did eat every herb of the land, and all the fruit of the trees . . . . and there remained not any green thing in the trees, or in the herbs of the field, through all the land of Egypt". To this day, the locust still lays waste large areas of the world, and the weight of a large swarm has been estimated at 1500 tons. They are difficult to control except by spraying, which often kills creatures such as storks, which feed on the locusts. After a locust invasion, many animals starve to death, and famine descends on the people.

The locust does have more agreeable relations. Since early times, the house cricket has been regarded as a symbol of good fortune, and the chirping of a male cricket was a very welcome sound. Tiny cages were made for them, and they became treasured pets.

During Man's development, he has always provided food for his family, or for the group within which he lived. Early man did not store food, and therefore was not troubled by insect pests which would attack it—only blowflies on his meat, which were attracted by domestic refuse. About 10,000 years ago, man began to plant and harvest crops, store food, and keep domestic animals, thus ensuring a more secure existence. This new way of life, coupled with the more permanent dwellings which he erected, opened up vast possibilities for large numbers of insects—providing them also with more secure homes, and more readily available food.

Flour beetles have been found in graves dating from 2500 B.C., and drugstore and tobacco beetles in the grave of Tutankhamun. The drugstore beetle—*Stegobium*—is the well-known inhabitant of ship's biscuits. It is estimated that as much as 15% of all stored human foodstuffs are eaten by pests (either insects or rodents), and the list of insect culprits is considerable. Flour moths originally occurred in India, but entered Europe in 1877 in a cargo of American wheat. Grain beetles and grain weevils also do considerable damage to stored corn. Not only do insects consume foodstuffs, they will also either eat, or damage by boring, wood, metal, and textiles.

The exo skeleton, or outer casing of insects is composed of chitin, strengthened with sclerotin. When very hard, as in the mandibles, this is the hardest material the animal kingdom can produce. Some insects can gnaw through lead, copper, aluminium, and zinc. Sometimes metal sheets are laid on timber containing pest larvae—the adults when emerging will pierce through the metal to get out. The clothes moth has always been a great destroyer of woollen materials, but nowadays its numbers are decreasing, due to the use of mothproofing substances, and the development of synthetic materials. Carpet beetles can do tremendous damage in the home, and Museum beetles, if left unchecked, will reduce a collection of dried insects to heaps of dust.

Timber suffers from a number of insect pests, such as furniture beetles, death watch beetles, and powder post beetles. In the olden days, timber was seasoned for years, so the cells still living in it used up their starch. Nowadays timber is often dried quickly by heat soon after felling; this kills the cells, but leaves within them an unused supply of starch, which is very attractive to beetles. Termites, which live only under tropical conditions, include some species which feed exclusively on wood. In uninhabited areas, they fulfil a vital function in breaking down rain forest debris into the raw materials to nourish new trees. But unfortunately they cannot differentiate between the wood of a fallen tree and the timbers of a house, and can therefore be very serious pests where there is human habitation. Living trees in this country are often attacked by the larvae of the Goat moth, which live in the trunk for about two years, eating tunnels in the wood, and thereby ruining the tree for commercial use.

Ants, like termites, are social insects, living in organised societies, storing, and in some cases even farming food. One group of ants—the honey pot ants—store honey, mainly the honeydew from aphids, occasionally mixed with nectar, in the greatly enlarged abdomens of some of the workers. Man sometimes gathers and eats the contents of these honey ants, regarding them as a delicacy. Driver ants from tropical America and Africa travel in columns several yards wide and up to 100 yards long, tearing to pieces anything which cannot flee from their path. Any house on their route must be vacated by the occupants, and any living thing in it is removed by the ants. On the benefit side, it must be said that all household pests already in residence are thus destroyed by the ants.

Mention must be made in passing to two important groups of beetles. First, the Burying beetles, which provide a valuable service in removing corpses of small creatures such as rodents and birds by burying them to provide a food supply for their larvae. Second, the Dung beetles, which behave in a similar way by forming animal dung into balls and burying it for use as a food supply. The Scarab was worshipped by the ancient Egyptians as a symbol of the sun and the forces of creation. In writing, the scarab hieroglyph came to mean "to be", or "to become". The scarab device was used to stamp the clay seals which protected containers and letters, and scarabs were carried as protective amulets, for it was believed that the insect had concealed in itself the power of eternal renewal of life.

Wasps have already been mentioned as pollinators of flowers, and as pests on fruit, but many species have another role to play—that of parasites. Many of these parasitic wasps are beneficial to man in that they destroy large numbers of insects which man considers harmful or destructive. These parasitic wasps frequently have hyper-parasites which prey on them, and these hyper-parasites are therefore pests from the point of human interests.

The numbers of flies and midges are countless. Many species can be considered to be foes, and one or two positively dangerous, as we shall see later. In holiday areas, such as beaches, swarms of flies will drive away visitors and seriously damage the area's economy. Anyone who has encountered swarms of midges, particularly in the northern parts of this island, will remember vividly just how maddening they can be. It is the

female midge which sucks blood before egglaying, thus paralleling the behaviour pattern of mosquitoes. One midge species in Malaya actually obtains its meal of vertebrate blood by sucking it from the abdomen of an engorged mosquito. Animals also suffer dreadfully from fly annoyance, and where farm animals are concerned, this can affect milk and meat production. Bot and warble flies are parasitic in the skin of ungulates, and will ruin the hides. Horse and deerflies cause great distress to their victims. Flies are great carriers of bacteria, by settling on refuse and middens, and then on to food. Their maggots consume carrion, and have been used medicinally in bygone days to clean infected wounds. One species of fly has been very useful to scientists, and that is a common fruit fly, *Drosophila melanogaster,* which has been a mainstay in the study of animal genetics. It has a simple genetic structure of only 4 chromosomes, which have a tremendous amount of natural variability; new mutants spring up spontaneously. A new generation is produced every 10-15 days, thereby permitting a comprehensive study of a large number of generations within a short time.

Many insects are of medical and veterinary importance in that they either cause pathological conditions or transmit pathegenic organisms to man or animals, and this has had a profound effect on the history of the world.

Three types of lice affect Man—the head louse and the crab louse, which do not transmit disease, and the body louse, which does; this is the vector of typhus, trench fever, louse-borne relapsing fever. Lice feed exclusively on blood, and are completely dependent on the microclimate found near the surface of the skin. If the skin temperature rises steeply, the lice will move away. In the Middle Ages, therefore, it was considered to be a very bad sign when one's lice left. Lice formed one of the plagues of Egypt, and legends involving them date back to Homer in 900 B.C., and to Phalanthus in the 8th century B.C. In 396 B.C., the Carthaginian siege of Syracuse failed because of an epidemic—now believed to have been typhus. If this siege had succeeded, Carthage instead of Rome might have become the dominant power in the Mediterranean region. Typhus was also responsible to a large extent, for the collapse of the Russian and Balkan fronts in World War I.

There are about 2,000 species and sub-species of fleas, all of which are exclusively blood-sucking in the adult stage. About 100 species are parasites of birds, the remainder of mammals. Some confine themselves to one particular species, others will pass readily from one host to another. The human flea, *Pulex irritans,* will also attack a variety of species including cats, dogs, pigs, and badgers. Cat fleas and dog fleas will also attack man.

The human flea is rare nowadays, but in earlier times was very common. It is the rat flea, *Xenopsylla cheopis,* however, which has had the greatest impact on the human race—for it transmits *Pasteurella pestis,* the causative bacterium of plague, which has killed untold millions of people over the centuries. The first recorded epidemic which can be recognised as such is that which struck the Philistines, and which is mentioned in the book of Samuel—"He smote of the people fifty thousand and three score

and ten men". Between 1347 and 1350, the Black Death killed 25 million people—a quarter of the entire population of Europe. The London epidemic of 1666 killed 70,000 people. The most recent example of flea-borne sicknesswhich most of us have seen, was the spread of myxamatosis by the rabbit flea.

One of the great insect scourges of the African continent is the Tsetse fly, which transmits the Trypanosomiases Sleeping Sickness in man, and Nagana disease in cattle. It is estimated that 10 million square kilometers of land in Africa which could otherwise support about 125 million head of cattle, are severely restricted for such usage because of the presence of the Tsetse fly. As a result, man has been denied the use of any domestic animals except poultry over an area estimated to be as much as a quarter of the entire continent. The result is the loss of a much-needed supply of protein—also to some tribes the possession of cattle is an important status symbol and a form of currency. Agriculture has suffered due to the lack of cattle manure as a fertiliser, causing shifting land usage. On the other hand it must be said that but for the presence of the Tsetse fly, vast areas of Africa would become desert, or a dust bowl through overgrazing by cattle and excessive human agricultural practices.

The last insect carrier of pathogenic organisms we shall consider is the mosquito. The female mosquito must have a meal of blood before she can lay eggs, and it is during the acquisition of this blood that the pathogens are transmitted. The egg, larval, and pupal stages of the mosquito are spent in water, the stages in the life cycle are completed quickly, and the combination of these two factors makes the mosquito very difficult to control. A shower of rain, a small depression in the ground—perhaps a hoof-print—so that a puddle forms—is enough to form a breeding ground for the insect. Mosquitoes are very widespread and numerous, particularly in the tropics, but they occur in all latitudes and altitudes. They are found at a height of 4,300 meters above sea level in Kashmir, and at 1,160 meters below sea level in the gold mines of southern India; they occur in the tropics and in the Arctic.

Mosquitoes transmit equine encephalitis, and are the sole vectors of the pathogens causing human malaria, yellow fever, and dengue, and they are of prime importance in filariases. They have made large areas of the world uninhabitable. It has been said of the mosquito's salivary channel: — "Down this microscopic groove has flowed the fluid which has closed the continent of Africa for countless centuries to civilisation, and which has played a dominant part in destroying the civilisations of ancient Greece and Rome".

Important mosquito-borne viruses affecting man are: — Rift Valley Fever, carried by *Aedes* and *Culex* species, a severe disease of cattle and sheep in South Africa—handling the dead animals transmits the fever to humans; Chikungunya virus, affecting humans in Africa, India, and South-east Asia; Dengue fever, carried by *Aedes aegyptii.* This last species is also responsible for transmitting Yellow Fever, which killed 20,000 workers on the Panama Canal and forced the French to give up construction attempts.

There is archeological evidence of human malaria in the eastern

Mediterranean region at the beginning of the Neolithic period, and the disease occurred in Britain until the end of the 19th century. Malaria was so called because in the Pontine Marshes outside Rome bad air—malaria —was thought to be the cause. At the present time, as many as 300 million people in the world are affected every year with malaria. It is caused by protozoa of the genus *Plasmodium,* transmitted by subcutaneous inoculation of sporozoites by *Anopheles* mosquitoes. These sporozoites develop in the liver, and eventually morozoites are liberated into the bloodstream and enter the red blood cells. This cycle greatly increases the numbers of the organism in the bloodstream at fixed intervals according to the species, thus causing attacks of fever. The mosquito takes in the gametocyte stage with its blood meal, and the remainder of the cycle is completed in the wall of the mosquito's stomach, from where fresh sporozoites are liberated which migrate to the salivary glands ready for injection into the next victim. There are four species of *Plasmodium* involved—*Plasmodium falciparum, P. vivax,* and *P. ovale,* which all produce tertain malarias—that is—the fever occurs at intervals of 48 hours. and *P. malariae,* causing quartan malaria, that is, fever every 72 hours.

So after this very brief glimpse of some aspects of the insect world, is it possible to form an opinion as to whether the human race can regard the insects as friends, or as foes? A quick decision might be made in favour of "foes", but this might be too hasty. True, insects are the only creatures that today dispute man's dominance of the planet, but each and every species has its niche in nature. Harmful insects as well as beneficial ones all have their place in the food chain, providing sustenance for other creatures that we value, be they carnivorous insects such as dragonflies, fish, some small mammals, or insect-eating birds. They also ensure the continuation of the flowers we love by the act of pollination, and provide man with a wide variety of fruit.

On an aesthetic level, over the centuries the beauty of some of the insects has formed a source of inspiration to artists: — poets have long spoken of the beauty of butterflies—one of the earliest being Spenser who in one poem described the creation of the butterfly by Minerva: —

> "The velvet nap which in his wings doth lie
> The silken downe with which his back is dight
> His broad outstretched hornes, his hayrie thies,
> His glorious colours, and his glistering eies."

The glorious colours have prompted artists to include them in their paintings, and many a still-life portrays butterflies or moths hovering near the central arrangement of fruit or flowers. In Greek and Roman art, Psyche, the wife of Cupid, is usually represented as a girl with butterfly's wings. Music, too, has been inspired by the insects. Examples which spring to mind are "The Flight of the Bumble Bee", Grieg's "To a Butterfly", and "The Song of the Flea".

The human race therefore derives both good and ill from the presence of insects. If we believe that God created all things, then we must accept that each and every one has its own vital part to play in the pattern of life on this planet.

The 77th Report of Council for the year ending 30th September, 1980

The Chairmen of Sections have again provided a high standard of lectures, field meetings and coach excursions, not least of which was the eight day field meeting to Cornwall, organised by Mr. and Mrs. Thomas.

A great deal of thoughtful planning is needed to provide the vast number of indoor and outdoor activities which are beneficial and pleasurable to members and a wider public.

Open Days are intended primarily to attract the public and ultimately, it is hoped, new members, but they are no less important to members, when the respective Chairmen are pleased to speak about exhibits of their section. This year emphasis was on the New Forest.

The Society's collections and equipment have received worthwhile additions this year by gifts of bird's eggs, known as the "Brown Collection", an extensive collection of fresh water molluscs in cabinets from the Rev. Stanley Dedman of Iwerne Minster, and a miscellaneous collection from the late Miss Balfour-Browne which included a microscope, tape recorder and cassettes; her own collection of UMBELLIFERAE, books on travel and natural history. Other items were Miss Francis Penrose's subscription for the magazine "Nature", and geological specimens from Miss B. Brazier, Miss K. M. Bennetts and Mr. F. B. Martin.

Equipment in the form of a new oak lectern made and presented by Mr. F. R. Watson, who was instrumental in procuring a duplicator and overhead projector. The cost of the latter was defrayed by the President, Mr. T. Crawshaw. The council expresses appreciation to all donors.

Membership has shown a valuable increase. Seventy-eight have been elected, off-set by a loss of forty-three, twenty-five resignations and eighteen by default of payment. The work entailed looking after the membership records is handled most efficiently by Mrs. B. Hooton Smith, Asst. Hon. Sec. and Mrs. I. Towndrow, Asst. Hon. Treas. Thanks are extended to them for their painstaking and time-consuming work. Figures up to the end of September 1980 record a membership of over five hundred, the highest for some years.

The names of members of Council, Finance and General Purposes and all other committees are mentioned elsewhere in the Proceedings and gratitude for their excellent work should be acknowledged by all members.

A study of the Proceedings reveals that some 10% of members play an active part in the day to day running of the Society. All work is on a voluntary basis. Further offers of help in all branches would be appreciated and are indeed necessary. Several members have been lost by decease and their names are recorded elsewhere.

Administration and Finance.

There have been a number of changes among the officers. Mr. R. C. Buckland retired as Hon. Sec. at the A.G.M. of 1979 and was succeeded by Mr. W. C. Thomas, who resigned in June 1980. Mr. F. R. Watson took over and Mrs. M. Saunders became Minute Secretary. The grateful

thanks of the Society are accorded to the retiring and newly elected officers.

For personal reasons Mr. W. V. K. Channon has resigned as Chairman of Archaeology and History. Mr. G. Teasdill agreed to take on the Chairmanship.

This year has seen the completion of revised agreements with the tenants, the Dorset Naturalists' Trust, and the Bournemouth Camera Club.

Money-raising events were in the form of the New Year and Garden Parties, Bring and Buy Sales and Coffee Mornings, and all have made valuable contributions to the funds. Thanks are due to all concerned.

The binding of the latest volumes of "Nature" has been successfully carried out this year. The cost has been largely met from a subscription fund managed by Mr. F. W. Wilson and the work carried out expeditiously through the good offices of Mr. G. Teasdill.

The Council, after very careful consideration, felt obliged to give notice of subscription increases to take effect on 1st October, 1980. The amounts decided upon are the minimum necessary to balance the accounts at a time of 20% inflation. Changes in the rates of subscription, not only require the close co-operation of many officers, changing existing orders and covenants, but also thrust a great deal of work for the hard-working and most efficient Hon. Treasurer, Mr. T. G. Wall, and high praise must be accorded to him. Thanks are also expressed to the two Hon. Auditors.

1980 has seen the necessity for the expenditure of well over £1,000 on the maintenance of the one hundred year old building and in the coming year a similar or larger sum will be needed for the painting of the front of the building. Inevitably maintenance and renewal costs are high at any time, but inflation adds to the problem. The premises are a valuable asset and as such must not only be used with economy, but also yield the maximum income consistant with the management policies of the Society. These are matters also to be fully examined by the Finance and General Purposes Committee in the coming months.

This report should not be concluded without recording thanks to the "back-benchers", who quietly contribute to the success of the Society, but special mention must be accorded to Mr. John Mitton, for many years chief projectionist, and his colleagues, without whom the lectures would be the poorer. The caretaker, Mrs. Garlinge, continues to give complete satisfaction.

Finally, a look through the first programme of 1980/81 reflects the high standard which will remain the aim, by those responsible, to maintain.

Archaeology and History

A very welcome feature of the lectures provided by this Section during the past year, was the large proportion of them that were presented by members of the Society, who had never previously addressed it. This was particularly relevant in the case of Miss M. W. S. Davis, who gave us a remarkably fine first lecture on October 17th, entitled "An archaeological

tour of Sicily", for not only did she prove to be a pleasing speaker but her accompanying slides were excellent. She dealt with the extensive Greek and Roman remains to be found in the island, the cathedrals at Palermo, Syracuse and Messina, and concluded with some vivid shots of Mount Etna in eruption. After her successful debut she was naturally in great demand, but nevertheless found time to give us a further delightful talk in April on "Pompeii and Herculaneum".

On November 17th Mr. Colin Dean gave us an incisive talk on "Captain Cook"—Famous Explorer—unknown man". He touched on Capt. Cook's early days in Yorkshire around Whitby, in the East End of London and at Cambridge. His enthusiastic research was illustrated with documents relating to sales of property, old charts, maps and records of his voyages. In December, an absorbing talk on "Life with the Romans at Rockbourne Villa" was presented by the curator, Mr. Donald Jarvis. This villa is of the courtyard type with mosaic pavements, under floor hypocaust heating and contains over 70 rooms, whilst large hoards of coins, pottery and other valuable items have been discovered there. Mr. Jarvis also described various aspects of Roman life, including their cooking, recreational pursuits and games.

Two further members who addressed the Society for the first time were the Rev. D. E. C. Jardine with a lecture on "Some Neolithic Monuments" in January, followed in February by an equally interesting one on "Survivors of the Great Fire of London" by Miss P. E. Winter. During his talk the Rev. D. E. C. Jardine included not only Avebury, Stonehenge and Carnac, but also structures in Cornwall, Jersey and the Orkneys. Miss Winter illustrated her talk with engravings from the Guildhall Museum, and spoke chiefly of the Bishopgate area which escaped the fire, particularly St. Helens and its monuments.

In his illustrated talk on "The Moorish influence on Spanish History" on March 8th, the Chairman briefly described the Moorish occupation of the southern part of Spain from 711 to 1492 A.D. with emphasis on Granada, Cordoba and Seville.

Miss Bennetts in her talk on "Early Peoples' of Australasia" on May 19th, gave a lucid account of their history before the advent of the white man, including details of their tribal traditions and artistic achievements, particularly wood carving. Mr. Lee in his usual sparkling form presented a very colourful programme on "Moghul India" on June 18th.

Finally on 27th September, Mr. Graham Teasdill provided us with a delightfully nostalgic recital on the "History of Bournemouth's Lost Railways". His varied slides included some of past famous locomotives, disused local railway tracks, vanished stations such as Wimborne and Sturminster Newton, and of the Avon Causeway Hotel, formerly Hurn Station. A most interesting and well documented discourse, but tinged with sadness for those of us who relished the days of Steam.

The Section participated in only one excursion this year, when on April 29th Mr. Ian Horsey, the Archaeological officer of the Poole Museums, conducted us on a detailed and rewarding visit to the New Archaeological Gallery at Scaplens Court. Unfortunately the projected coach outing to the Weald and Downland Open Air Museum at Singleton, planned to

take place during July, had to be cancelled owing to the illness of the Chairman. *W. V. K. Channon, Chairman.*

Astronomy

The activities of the Section consisted of four lectures.

On October 27th, Colin Pither gave a talk on "The Planets". Colin is a well-known local amateur who has considerable experience in planetary observations, Venus in particular. He discussed the physical nature of the nine major planets of the Solar System and appearances through a telescope. He illustrated the talk with numerous slides, and with a model he had made to show the scale of the Solar System. This model consisted of a box with a wind-out length of string which stretched about 20 yards. The planet positions were marked on the string.

On December 29th, the Chairman of the Section discussed "Galaxies". He stressed the large amount of scientific ignorance at the present time about these great star and gas "Cities". The lecture was illustrated with many fine slides of photographs taken through some of the world's largest telescopes.

On January 19th, Geoff. Kirby gave a talk entitled: "U.F.O.'s—Fact or Fiction?". The general interest in the subject was demonstrated by a very large audience. Geoff, a very experienced amateur from Weymouth, has made a special study of U.F.O. phenomena over several years. His approach is open minded and completely scientific. The procedure is to examine U.F.O. reported sightings in the light of possible natural explanation. It appears that the vast majority of sightings can be accounted for by "I.F.O.'s". In the U.S.A. in particular, ubiquitous advertising aeroplanes seem responsible for many reports! Nevertheless, some authenticated reports do suggest a real mystery.

Finally, on March 29th, Adrian Owen gave a talk on "Recent Solar Eclipses". Adrian has become something of a local celebrity as an "eclipse chaser"—a person who travels all over the world to witness total solar eclipses. His score so far is three—all seen successfully. His first eclipse was on June 30th, 1973, which he viewed from the middle of the Sahara Desert, then on February 26th, 1979, he travelled to the frost-bound wastes of Canada to see the second. His third eclipse was in the tropical heat of Kenya on February 16th, 1980. This was the eclipse he concentrated on in his talk. He had taken some excellent photographs of the eclipse at all stages.

Adrian's "totality total" now stands at 12 minutes 37 seconds, and he is eager to increase this during forthcoming eclipses.

Graeme Nash, Chairman.

Botany

The October meeting in the New Forest was for the study of Fungi. This was under the leadership of Mr. R. Lees.

The November meeting, also in the New Forest, was led by Mr. Robin-

Fletcher, who explained in detail the various species of trees to be found there.

The four August meetings, all held in the New Forest, were most successful, and were favoured with good weather. The plants of special interest found were: *Illecebrum verticillatum, Exaculum pusillum, Pinguicula lusitanica, Kickxia elatine, Sagina procumbens, Epilobium brunnescens, Erigeron acis, Parietaria diffusa.* The rich flora is due to the various habitats to be found there, consisting as they do of woodland. bog, heathland and the 'Lawns'.

The Durlston Head meeting was on a beautiful day. Large numbers of *Carlina vulgaris* and drifts of *Cirsium eriophorum* were conspicuous.

The Binden Hill meeting will be remembered for the sight of the lovely blue *Echium vulgare,* and for *Campanula glomerata.* Large drifts of *Genista tinctoria* were also present. At Gussage All Saints was found the uncommon *Coeloglossum viride.*

The Corfe Castle meeting was held on a good day. The party was accompanied by Mr. Bartram, the Herbalist. He was able to draw attention to many herbs growing in the wild, among them were *Calamintha nepeta,* the white form of *Origanum vulgare, Parietaria diffusa* and *Verbena officinalis.* Other plants noted by the party: *Spiranthes spiralis,* quite out of its natural habitat, and lovely *Inula conyza.*

A record is kept in the Botany Room of all the flowers found on the various Field Meetings, and I think that members will be surprised at the numbers, they vary from 50 to 100. Mr. R. G. Lees has been our leader on most of the outings, and his wide knowledge of Natural History subjects has been a great help, and I am most grateful to him. I must also thank Mrs. Molly Saunders, Miss Beryl Norton, Mr. Reg. Wall and Mr. John Hartop for their able leadership.

D. I. Dain, Chairman.

General

Sounds of the Countryside, a joint effort given by the ornithology and photographic sections. One of the most interesting recordings made by Miss Ogle was a sequence of blackbird song over a number of years. Included also were the voices of blackcap, whitethroat and other warblers accompanied by a running commentary by Mrs. Maddox.

Mr. Robin Goodman spoke of the history of Insurance and its usage in modern life.

Miss M. Collinson's photography of Mt. Etna erupting and its environs was spectacular. Her slides and commentary of ancient Sicilian villages were well chosen.

A selection of News Items and Readings of scientific interest scheduled to be given by Mrs. K. Lawrence was cancelled at the last moment. Mr. F. R. Watson stepped in and gave an impromptu talk "Round and About in Bournemouth".

Miss B. Brazier in her talk "Around Wishford Magna—A Wiltshire Village" brought to life the history of the Church, part of which dates

back to 1208. Among interesting features were the sundial and "bread stones". The former is on the east end of the Church and it is thought to be a Priest's dial as it only records the time from 6 a.m. to 10 a.m. The figures are in Arabic style which suggests a Post-Reformation date. The "bread stones" are inserted in the churchyard wall and depict the price of bread per gallon from 1801 to 1971.

Grovely woods, the property of the Earl of Pembroke, retain Rights for the villagers of Wishford to collect wood for fuel and decoration. The 10th Earl of Pembroke endeavoured to deprive them of this Right, which had been in existence since 1603. An Oak Apple Club was formed to counteract that in 1892. Each year on 29th May these Rights are renewed in Salisbury Cathedral. Part of the ceremony is a dance by four women dressed in 18th century clothes. Each dancer carries a bundle of faggots on her head. A green branch of oak is hung from the village Church tower—possibly a survival of an age old folk custom.

Slides of unusual subject matter combining beauty and originality were shown by Miss Mary Exton.

A lecture on Tea from bush to packet was given by Mr. Keith Spicer. Slides showed the pickers, mostly young African and Indian girls who collected only the two top leaves, which were flung over the shoulder into cane baskets and then transported to factories to be processed, graded and packeted ready for shipment overseas or for home consumption.

Mrs. Joyce Gray gave an illustrated account of her Himalayan adventure. She had a ten-day trek in the Helambu area north of Kathmandu along high ridges, through Sherpa villages. Fine views were gained of the Langtang range, Gamash Himal and distant Annapurna. Three days rafting down the Trisuli river had exciting episodes negotiating the rapids. A highlight of the holiday was a visit to the Royal Chitawan Wildlife Park with an elephant ride through the jungle to see the rare one-horned Indian rhino and a trip in a dugout canoe down the Rapti river. This was alive with stork-billed, blue eared, white breasted and pied kingfishers.

Mr. Ken Thompson of Air Traffic Control gave a lucid account of the safeguards taken for the safety of the passengers and planes from take-off to destination, in his talk "Your Life in their Hands".

K. M. Bennetts, Chairman.

Talk given by Dr. G. Ames on 12th July, 1980, entitled "Some Scientific Elements of Communication in Animals"

The subject of pheromones was dealt with first and it was explained that these chemical substances, usually scented, which are discharged from the bodies of animals to produce a definite reaction of behaviour from other members of the same species. A number of examples of pheromone action were described. These included pheromones released by certain fish in times of danger or stress to alert other members of a shoal, and a pheromone known to act when mice are caused to live in crowded conditions. In this latter case experiments proved that symptoms of stress resulting from lack of adequate living space caused disturbed

behaviour and impaired ability of females to reproduce successfully. Other revelations of quite an astonishing kind made as a result of experimental evidence were that there are pheromones in the urine of mice which can communicate fear, the sex of the mouse and whether it is a dominant animal in a group. A variety of scent spreading devices have been evolved by mammals, not only to mark territories but also to provide social signals which indicate the identity and even the state of mind or intentions of the transmitting animal. From sebaceous glands, which secrete a fatty substance around the base of each hair, have evolved the milk-producing mammary glands and a variety of scent-producing glands. There are pheromones from the chin glands of rabbits, facial glands of deer and antelopes, the tail glands of foxes and many others. Deer have pheromone-secreting glands in their hoofs as well as on their faces. The next item in the talk dealt with communication in night-flying moths, coupled with the importance and properties of the insect antenna. One interesting fact about the insect antenna is that it can be the site of many senses, namely touch, air pressure, sound, heat, taste and the detection of odours. Communication in night-flying moths as reported, comprises a complex and highly-sophisticated system which involves insect radiation, pheromones and infra-red radiation of the electro-magnetic spectrum. The infra-red is the natural sea of radiation in which we all dwell on this earth. A small portion of the infra-red, usually regarded as a distinct region, is visible to us as ordinary light. Apart from this portion, we humans only detect infra-red radiation as heat; we cannot distinguish the different infra-red frequencies, but many insects can. Most insects possess a vibration sensor called Johnston's Organ, situated in the second segment of the insect antenna. This organ is utilised by the night-flying moth during the process of guiding the male moth to the female in matting. An attractant pheromone is emitted by the female and, while the male moth flies on its way to the female, the frequencies of the pheromone molecules are known to match the wave-length design criteria of the receiving organs on the antennae of the male insect, so the sensilla sensors on these antennae respond to the pheromone scent molecules from the female. A navigational signal is given off, in addition, by the female who although stationary indulges in wing-flapping and this wing-flapping produces a 10-micron infra-red radiation modulated by the radiation coming from the heated body of the insect. The frequencies of this infra-red radiation can be detected by the male at a distance of a mile or more.

It is an interesting fact that every living thing, including plant life, emits its own radiation, the wave length depending on the temperature of the living thing.

The final item of the talk was about migratory birds, with brief remarks on effects of the earth's magnetic field on animal life. Many migratory birds fly thousands of miles from winter homes to summer breeding grounds. In some species the parent birds fly back before their recent offspring are ready to make the journey. The cuckoo is one of these and the parent birds fly back to Africa about a month before the young cuckoo is ready to go. The young cuckoo then goes off all on its own, across the continent and over the Mediterraneum. How does it know where to go?

In the past the idea that these birds possessed some kind of internal magnetic compass was scorned. Now, however, this idea has attracted increasing support and recognition among biologists. In an article in the magazine *Nature* by Dr. Jeremy Cherfas it states that a spate of recent research makes it abundantly clear that these birds not only use the earth's magnetism but actually do so rather well. The article describes a number of expertly designed experiments which have been carried out on this subject and although they do not know exactly how birds use geomagnetism, research is proceeding. It is known that homing pigeons possess in their head a fragment of magnetite, and magnetite is magnetic oxide of iron, sometimes called lodestone. It has been found that stingrays and sharks can detect the earth's magnetic field, as also do salamanders and bees. The dance of the bees, which indicates direction to a source of food, is disorientated if artificial means are taken to neutralise the influence of the earth's magnetic field. Finally, there is evidence to suggest that certain bodily cycles and functions in all animals, including man, are tuned to the earth's magnetic fields.

Eight-Day Field Meeting to Cornwall
10th-17th May, 1980

This year the eleventh Field Meeting with the present leaders was based at Newquay, exceptionally of eight days' duration, to comply with the Sandridge Hotel, which afforded us superlative accommodation on the Headland, overlooking Fistral Bay, so that members were able to walk in the early morning and evening on the flower-strewn cliffs, with particularly admired groups of rare cowslips and the habitation of sea birds. The weather throughout was extremely good. As it is now difficult to arrange communal meals out, a refund on the charge was given for members to buy most of their own snack lunches and teas.

Coach outings were arranged each day to provide satisfying opportunities for as many of the Society's sections as possible, for the following day. In addition explanatory leaflets, including plans, were distributed at the Briefing Meeting for all the places visited.

We set off on a glorious Saturday morning for the long journey, pausing at Bridport, for coffee and an arranged snack lunch at a road-house near Oakhampton. We entered Cornwall via Launceston, showing from afar its prominent Norman Keep, until the last century when the Assizes moved to Bodmin, it was the capital of Cornwall; it is still an important market town. A tour of the town included a visit to the Castle, with its fine Henry VIII Gatehouse, where George Fox was imprisoned in 1655; the picturesque streets, with their slate-hung houses; Windmill Hill, where the Armada beacon flared, with an excellent view over Dartmoor and Bodmin Moor and the architectually fine roof-scape of the town; Southgate, the only remaining entrance of the mediaeval walled town, with a standpipe of 1823, the town's first water supply; and, above all, the remarkable church of St. Mary Magdalene, erected in 1524. This church has the unique external feature of each granite stone being intricately carved; they were removed from the Manor House, which Sir Henry

Trecasle was building when his wife and son tragically died, so were given to the church. At the East end, sculptured in the wall, is the recumbent figure of the Saint, surrounded by St. Mary's minstrels with their instruments. The interior is equally fascinating. And so on over Bodmin Moor, with its innumerable Neolithic bronze and iron-age monuments, to Newquay.

On Sunday we spent the morning in the China Clay area, visiting first Charlestown, with its tiny granite harbour, lock gates and pretty little marine terraces, all built in 1791 out of the hill-side, by Charles Rashleigh. It obviated the dangerous discharge of coal and embarkation of china clay on the beach; for many years it was the port for the bulk of china clay traffic. We continued to St. Austell, the "Capital of China Clay", which for the last century has been Cornwall's chief industry. After observing at close quarters the enormous white mountains of waste, which provide a prominant feature of the landscape for many miles, we spent the rest of the morning in the Wheal Martyn Open Air Museum of China Clay, starting with an interesting historical film of the industry. We spent a long afternoon in Polperro, probably Cornwall's most picturesque village, devoted to fishing and now tourism, but early in the nineteenth century noted for smuggling; it is thought to be the earliest Customs Station, and many hiding places for contraband exist in cottages. Its most famous inhabitant was Jonathan Couch, Sir Arthur Quiller Couch's grandfather, he was born and lived here as the local doctor and philanthropist, a Cornish Gilbert White, whose naturalist researches, especially into fishing, brought him much renown. His house, the Smuggling Museum, is of great interest, and we were delighted in the *Mesembryanthemum*-strewn cliffs.

We travelled North on Monday, pausing at Wadebridge to admire the fine bridge, in which the one of 1468 is incorporated, making it the oldest bridge in England in constant daily use. It superceded the extremely dangerous ford and ferry crossing and the shifting sands necessitated the piers being sunk on woolsacks. The morning was spent at Tintagel, first in the Norman church, then a delightful walk round the castelleted and flower-bedecked cliffs, perhaps the most imposing in Cornwall, to obtain a fine view of the castle and the scanty remains of the sixth century monastery —a tourist attraction since about 1150, when Geoffrey of Monmouth circulated the legend that King Arthur was born here. In the village we visited the mediaeval manor house, now the Post Office, and King Arthur's Hall which has 73 stained glass windows and 50 different kinds of beautiful stones, also a historical doll exhibition. The afternoon was spent at Boscastle, with its tiny harbour, so dangerous that vessels were brought in by hawser, but much used in the Middle Ages as the only refuge along this fearsome coast. We proceeded to the enormous slate quarry at Delabole, still worked after 400 years and one of the largest in the world, producing the finest slate in Cornwall. Our final visit was to Padstow, famous for its May-Day Hobby-Horse. It was the centre of the fishing industry and trade in large ships, with a harbour 6 miles long and 1 mile wide until, within living memory, it completely silted up.

Tuesday was a memorable day of sunshine. We first visited Roche Rocks, a fantastic outcrop of schorl rock, mixed with sparry quartz, rising a hundred feet from the plain. The early 15th century chapel of St. Michael, reached by a ladder to the summit, has a hermit's cell below. We spent the next four hours at the 17th century Lanhydrock House, destroyed by fire in 1881 but immediately rebuilt. Perhaps its most notable features are the original gatehouse and the 116 feet long gallery, with its remarkable barrel plaster ceiling of 1642, with 24 sculptured panels depicting incidents from the Old Testament, surrounded by smaller outer panels portraying multitudes of birds and beasts. The extensive grounds were superb, with flowering shrubs and other plants at their best. After lunch there we visited nearby Restormel Castle, the Keep, well restored, rising picturesquely on an imposing mound. The President of the Old Cornwall Society met us there and gave us a talk on the castle and its ownership by the Black Prince, of whom she is a descendant. She then accompanied us to the adjoining town of Lostwithiel, on the River Fowey, and opened its museum for us. She had very kindly prepared a plan and itinerary of the town, which we photocopied for each member. Of particular interest was a lease stone on one house. "Walter Kendal was founder of this house 1658. Hath a lease for 3 thousand years. Had beginning 29th September 1658." Lostwithiel was the mediaeval centre of the tin industry and still displays 600 years of architecture, with the 13th century bridge and church, Stannary Hall and prison, the 18th century Market, Assembly Rooms, Grammar School, Municipal Offices and houses of various periods.

Wednesday was a statutory free day for our driver and members chose their own occupations—on the fine cliffs, with the Huer's stone hut as a look-out for the approach of pilchard shoals; in the Gardens and visiting friends in outlying places of interest.

Thursday was devoted to a visit to Falmouth with pleasant journeys via St. Day and the return via Truro. We first drove round Castle Drive, stopping for an excellent view over the Docks, the Inner Harbour and Carrick Roads, then on to a visit of Pendennis Castle built by Henry VIII as one of the twin defences, with St. Mawes Castle, of this splendid harbour. After a pre-arranged lunch at the Castle Tavern, the party was conducted on foot along a high terrace walk, affording extensive views over the town and fishing harbour, Flushing and the Penrhyn River, to the top of Jacob's Ladder, one hundred and eleven steps down to the centre of the town, which everyone negotiated successfully. We then dispersed for individual occupations for the afternoon, some crossing to Flushing or St. Mawes, others having a cruise up the Penrhyn River or simply enjoying the harbour sights in the sunshine.

On Friday we first visited Gwennap Pit, a collapsed mine, converted into an amphitheatre cut into the hillside, with 13 circles of turf stepped up 18 inches high and with a diameter of 146 feet. It has perfect accoustics. John Wesley preached here many times between 1743 and 1762 to overflowing congregations of as many as 30,000 and every word could be heard. The parish is said to have yielded more copper and tin

than any comparable area in the world. Every Whit Sunday Methodists have assembled since 1809 to hold a commemorative service. There had been some consternation at the announcement that the morning was to be largely spent in the Camborne School of Mines Museum; however, everyone was entranced by the beautifully arranged display of rocks and minerals, in astonishing variety and colour, mostly collected since 1888, by students from field studies in mines world-wide. We left in time for lunch and a long afternoon in St. Ives, a picturesque little town and fishing harbour, haunted by artists like Barbara Hepworth.

We returned to Bournemouth on Saturday, by a different route, via Liskeard and Gunnislake, for the steep crossing of the boundary River Tamar, then to Tavistock and all across Dartmoor, looking resplendent in the sunshine, and passing close to the famous prison. We had a long stop at lovely Dartmeet, with its ancient clapper bridge, for a superb lunch at nearby Badger's Holt, which was originally a fishing lodge for the Manor mentioned in Domesday. We completed the Field Meeting with a delicious cream tea, some of us in the garden, at 16th century Slepe Cottage, near Bere Regis.

W. C. Thomas and G. M. Thomas, Leaders.

Geography

Lectures

This Section's first lecturer for the year was Mr. F. R. Watson whose subject was "Bricks". He outlined the history and usage and explained the reasons why so many small brickworks were going out of business. With the aid of a film and slides loaned from the Brick Development Association and examples from the local brick library the lecturer showed the various bonds and colours, also examples of different styles of brickwork in our buildings.

Miss M. W. S. Davis talked on Western Anatolia (Turkey) illustrating the Greek and Roman remains in that area and taking us to the interesting ruins of Ephesus including the famous temple of Diana built in the 6th Century B.C. The journey finished at the city and seaport of Istanbul which controls the sea route from the Mediterranean to the Black Sea, with its many mosques, Christian churches and Jewish synagogues.

The Reverend Ernest Edwards gave an illustrated talk entitled "Thirteen years residence in Samoa". His excellent slides showed the beauty of the scenery of this group of South Pacific Islands. The main crops were coconuts and cocoa beans with various tropical fruits, but there are few animals and birds. The speaker added that the woman used the husks of the coconuts for coir to make mats, baskets, etc. The inhabitants are very proud of their links with Robert Louis Stevenson who emigrated to these islands after spending some years in Bournemouth.

Mrs. Jessis George gave a very interesting lecture entitled "The land of the long white cloud" (the translation of the Maori name for New Zealand). Her fine transparencies fully illustrated the beauty of the islands with their mountain backbones, numerous lakes, waterfalls, caves, gold

mines and gorges. The slides were accompanied by a clear commentary which enable the members to get a vivid picture of these distant islands.

In March our speaker was Mr. F. Oldham who showed in his lecture "The Geography and History of Leicestershire" that despite the fact that few tourists visit this part of our country it was full of interest. The Geology varies from pre-Cumbrian rocks, Charnwood Forest and the Limestone hills in the east. These provided between them macadam, timber and coal seams. The county's main industries to-day are hosiery, footwear and engineering. Mr. Oldham described the main historic events and illustrated his lecture with places of interest in the City of Leicester.

This was followed by a talk from Col. A. Hemsley on "The Bulbfields of Holland". He showed us colourful slides of some of Holland's principal cities, its intricate system of dykes and canals by which the Dutch have protected their low lying country. We then visited the "Keukenhof", a wonderful park devoted to the permanent open display of Dutch bulbs.

Our next lecture, which was given by myself, was entitled "The Isle of Purbeck". The varied countryside comprising the limestone coastal belt, the chalk hills, the clay valleys and the open heathland were all fully illustrated. It was explained that although bounded on three sides by water on the western boundary the Luckford Lake does not reach the sea so that the "island" is actually a peninsular. The subsequent lecture was also by myself and entitled "Down the River Test", one of the finest fishing rivers in England. The river starts at the hamlet of Ashe passing through the towns of Stockbridge and Romsey and many attractive villages completing its journey in Southampton Water where it is joined by the River Itchen. Various illustrations along its course were shown.

Miss M. E. Dennis of the Dorset Nature Conservancy spoke on "Farming and wild life in Dorset", her theme being that they should go hand-in-hand. In an interesting illustrated talk she said that to preserve the flora and fauna a balance must be found between farm management and the preservation of habitants for wild life. Some excellent views of the delightful countryside of Dorset were shown.

Mr. Brooks illustrated talk was on his tour of "Norway" starting from Bergen, proceeding northwards across the Arctic Circle and returning via Oslo. Many views of the beautiful fiords with their reflections of the mountains were shown, also the valleys, glaciers and waterfalls. In contrast I spoke on "North Wales" including the high plateau of hill country comprising Snowdonia with its mountains, lakes formed from old lead mines and lovely valleys. The three fascinating narrow gauge railways were also described and illustrated.

Mr. H. L. Edwards, assisted by Mrs. Edwards, continued his talk "Down Under". On this occasion his talk centered on Sydney with its magnificent harbour and the surrounding countryside including the beautiful Blue Mountains and the numerous surfing beaches.

The final lecture of the session was a talk by Mr. W. Brown on "Coal". The lecturer had spent the early part of his life down the mines and described his experiences. He also explained in detail the general construction of a mine, its workings and dangers. Mr. Brown is busy writing a book on the subject which will shortly be published.

Field Outings

We had previously made a visit to the Ordnance Survey at Maybush, Southampton, but the party had to be restricted to twenty. Consequently many members were disappointed so a second visit was arranged, the party being led by Mr. F. R. Watson.

In November a morning outing proved very successful. Well over thirty members turned out on a cloudy but mild day to explore the almost unique Talbot Village, which seems to be practically unknown to many Bournemouth citizens despite its being within the town boundary. The village development was started in approximately 1850 by the Misses Talbot, the cottages all being given gardens of approximately one acre. The adjoining woodland comprised a great variety of trees, birds, small mammals and wild flowers.

Our first outing in 1980 was again a morning walk, this time the route being through Pugs Hole into the Upper Bourne Valley where we followed the river downstream to Coy Pond and along part of the Upper Bournemouth Gardens.

A whole-day visit to Stockbridge and Danebury Camp was also very well supported. The one-time rotten Borough of Stockbridge was explored including the Drovers House and the old and the new churches. The party then proceeded over the common owned by the National Trust. Following a picnic lunch at Danebury Camp the magnificently sited Iron Age camp was fully explored.

Our final outing, led by Mrs. W. Robins, was to Kingston, visiting the Gothic-style church and then proceeding over the chalk hills to Swyre Head, the highest point in the Purbecks. From here the cultivation of the chalk hills was studied and explained, only the level fields being ploughed, otherwise the top soil would be washed down into the valleys below. After lunch the party dropped down to the Encombe valley to visit the grounds of Encombe House with its lake, formal gardens and wooded valley and stream leading to the cliff edge.

W. O. Robins, Chairman.

Geology

The Geology section continued with its session of informal meetings to study the specimens in our Museum. These meetings are of value to interested members as they have opportunities to handle the various fossils and rocks; the "feel" of rocks is a great help to identification.

The Chairman and Deputy Chairman, Mrs. Saunders made changes in the glass-covered display cabinets, both in the hall and museum, one such display in the museum was devoted to the display of the many forms of silicates from the Crallan collection. The case in the Entrance Hall being, at the same time devoted to the more common minerals. The case which this section shares with the Library Committee is devoted to matters of tropical interest. An example being the display of rocks, fossils and maps prior to a field meeting.

Old photographs belonging to the Geology section of cliff exposures

were compared with the present carefully tended cliffs designed to stop erosion during the promenade walk from Alum Chine to what used to be Honeycomb Chine.

"Singing sands" were found at Shell Bay and the North end of Studland Bay, because fortunately it was a day when conditions were suitable to cause the sands, when trodden on to emit a squeaky singing sound. This beach in Dorset is one of the four places in Britain where this phenomenon occurs.

Mr. and Mrs. Parkinson took the Chairman and Mrs. Saunders for a preliminary study before the visit to Beer Quarry and we were able to collect samples of the *Rhaetic* series which contained *Chamys valoniensis* and a bi-value. These were only broken fossils not up to Society's usual standards but they fulfil a need as this is the only system not represented in our collections.

The three coach trips undertaken by this section were very successful. On the one to Tyneham we saw cliffs of Worbarrow Bay, showing the succession from the soft Wealden clay to the limestone of Gad cliffs. The exhibition of geological maps in the small museum in Tyneham village was of great interest. We then went on to Kimmeridge bay and saw the "Nodding Donkey" oil pump and the stone band in Kimmeridge bay.

On the trip to Charmouth we stopped at Portisham where the houses built of *Oolitic* limestone show to great advantage. In Charmouth bay we saw the banded cliffs and specimens of Belamite *Passalothesthis loscombe* and Ammonite *Tragophylloceras loscombe* were collected.

Beer Quarries are still working the chalk above Beer stone for burning to make agricultural lime. Some intrepid members were shown "in the light of just one torch" the vast underground tunnels where stone was taken for Roman Villas and public buildings and, later because of the position on the coast it was sent by ship to many Cathedrals and Churches from the 12th century onwards. Beer stone is soft and easily cut but soon hardens when exposed to the air. A lunch stop was made at Seaton where the New Red Sandstone Cliffs are overlaid with an uncomformity of chalk.

Miss White a keen amateur Geologist and Botanist gave two lectures in this session, one on Iceland and one on Anglesey. Both these lectures were very fully illustrated by slides of a very high quality and the subject matter was of very great interest. Miss White has given the Society a Pre-Cambrian folded mica-schist pebble from Holyhead Island, Anglesey for which we are very grateful.

On November 3rd, Mr. Dobson gave a lecture entitled "In the steps of Mary Anning" who was the young girl who collected so many of the lias fossils in Lyme Regis and is among our first Palaeontologists. Lastly and by no means least, we had two lectures by Mr. W. A. Stinton and we welcome both Mr. and Mrs. Stinton, who have returned to us as members. Mr. Stinton told the story of china clay from the early history of William Cookworthy's Plymouth ware with pictures of the late Edgar Rees collection, before it was presented to the Truro museum. Today Kaolin is used in a vast number of ways bringing welcome industry to Devon and Cornwall, with a certain knowledge of enough reserves to

supply the world's manufacturing trade for the next five hundred years.

Mr. Lee has given the Geological section a beautifully mounted map of the Hampshire basin which hangs in the passage to the Library. To him and to all other members of the Society who have given so much help the chairman expresses her thanks.

Beryl Taylor, Chairman.

Physics and Chemistry

Science and technology affects the lives of all of us to-day. This general theme was well illustrated by the variety of lectures presented during the year.

In October, Mr. R. Maycock, of the Dorset Institute of Higher Education, gave a stimulating address on the interaction between our social environment on the one hand, and science and technology on the other. Scientists and technologists are sometimes accused of ignoring the possible effects of their discoveries and developments on everyday life. Our speaker, drawing on his experience as an engineer lecturing on social studies to students of engineering and science, showed how scientific knowledge had greatly improved our living standards. Science provided the means for doing many things more effectively, for good or ill. The onus was on society as a whole, including the scientific community themselves, to see that science was used for the benefit of mankind.

Our November lecturer, Mr. K. Oakley, Engineering Executive with Plessey Controls Ltd., of Poole, gave a graphic account of developments in electronics during the past thirty years. During this period, we had moved from the "steam age" of valves to the present-day silicon chip. Volumetric compression of devices amounted to many orders of magnitude, and there had been impressive improvements in response times. Applications had widened to many fields, ranging from the familiar domestic washer to the most complex automated factory.

Mr. R. Ellis, of I.B.M. (U.K.) Laboratories Ltd., in December, brought an infectious enthusiasm to his talk on "Broad aspects of computing and its social implications". There has been much discussion, nationally, about the impact of the silicon chip, mini-computers, microprocessors and data banks on the industrial and social scene. Some of us are apprehensive, but Mr. Ellis was clearly satisfied that the potential advantages were in balance overwhelming. These developments are here to stay, and can greatly improve our standard of living.

In January, Mr. J. A. Scott, of British Aerospace Ltd., Weybridge, gave us the benefit of his long experience in the aircraft construction industry, when he talked on "Corrosion and corrosion prevention in aircraft". Following a most illuminating outline of aircraft construction and operation, he focussed his attention on corrosion problems and the means taken to minimise or eliminate their harmful effects. One surprising example was the microbiological corrosion which can occur in fuel tanks carrying kerosene. Despite the widening of our knowledge of what can go wrong in aircraft, which we gained from the lecture, we were left with

the comforting feeling that Mr. Scott and his colleagues were keeping abreast of possible hazards.

One of our own members, Mr. Neil Luckett, spent many years at Courtaulds in research and technological development connected with man-made fibres. In February, he gave a most interesting and informative account of the wide range of man-made fibres, such as cellulose acetate (rayon, or "artificial silk as it was once known), nylon and polyesters. He took us through the various production stages, from the extrusion of the parent liquid to form fibres through to the production and dyeing of cloth. By courtesy of Courtaulds, he brought along for our inspection a wide range of specimens which illustrated all aspects of his lecture.

Mr. I. H. C. Roe, of B.D.H. Chemicals, in March gave a lecture on liquid crystals—chemicals which will change the plane of polarised light when subjected to an electric field. These were developed at Malvern and at Hull University. B.D.H. now make them in quantity. Mr. Roe demonstrated how they can be used to display numbers, as in digital watches. Other likely uses would be in motor cars for the display of information such as speed, temperature and fuel level.

In April, Mr. Frank Wood drew upon many years of experience with the Metropolitan Water Board to describe the problems in supplying such a large area with water, problems which had been tackled in different ways since the 15th century, and illustrated his talk with views of installations and reserviors which are familiar landmarks to travellers by air.

Things are not always what they seem! In June Mr. J. S. Jackson, of Alan Butcher Associates Ltd. of Salisbury, in his talk on "Applications of G.R.P. (Glass-Reinforced Plastic) in the Building Industry", opened our eyes to a use of plastics which many of us had not appreciated, or even suspected! Glass fibres, bound together by a suitable thermo-setting resin, give an extremely tough, resistant product, which by conventional forming techniques can provide a surprising range of building components, such as cornices, doors and door frames, and fireplace surrounds. Careful use of such embellishments can transform an otherwise commonplace abode into something which catches the eye. Many samples of raw materials and finished products were shown by Mr. Jackson, and members were intrigued to find that the domes of Brighton Pavilion, and even a church steeple, had been replaced by G.R.P.

I am most grateful to Mr. T. A. Crawshaw who, despite his busy life as our President, looked after the affairs of the Section during my absence in Australia in March and April.

T. H. Blakeley, Chairman.

Zoology—Entomology

The writer regrets that his field work was reduced this season owing to two spells in hospital. For our area a cold wet Winter was followed by an indifferent Summer and very cold, dull Autumn. The precipitation during December 1979—March and June 1980 was double the average.

Lepidoptera populations observed were about normal but most special were on-the-wing about three weeks later than usual. The common Cruciferous foodplants of the *Euchloë cardamines* larvae were in exceptional profusion, unfortunately the late emergence of the adults coincided with the Local Authorities' "Blitz" on the herbage of the verges and consequent decimation of the ova! Our local sites for *M. aurinia* were well populated. This year we were successful again in showing a party both sexes of *A. iris* in the field and one member obtained life-sized photographs of a male indicating the scale colour refraction. The larger Fritillaries were late in emergence and less numerous than during the last two seasons. *A. cydippe* seems gone from the Salisbury locality due to forestry action. The second broods of *L. bellargus* and *A. agestis* were exceptionally numerous at a site near Swanage. One member photographed two rare aberrations of *L. corydon* and the writer noted a single specimen of *P. daplidice* at this same locality. Several specimens of *M. galathea* were still flying during the last week of August. Our member, Miss M. Brooks who has photographed each stage in the life-cycles of all the British Butterflies during the last fourteen years, understands that this comprehensive work will be published during the Summer of 1981. *P. cardui* was widespread and numerous during late August. Our members, Mr. and Miss Brooks have been stocking a Reserve in the East of the county and recently released some two hundred *P. c-album,* bred by them, at this site. *ODONATA: G. vulgatissimus* has not been seen in the New Forest for two years. Happily, the scarce species: – *C. mercuriale* – *I. pumilio* – *L. fulva* still flourish at several sites locally. The last species has been adversely affected at the Longham locality by development work below the bridge. *S/Lr. J. L. C. Banks, Chairman.*

Zoology—Mammalia and Natural History

Miss M. Brooks related her experiences in and around Natal. This is a hilly country with crailles on the hillsides on which are grown crops of yams, mealies, sugar cane and sisal. In Southern Natal birds of Paradise sweep through groves of wild bananas and praying mantis mimic various flowers, and crashing through the trees are troups of vervet monkeys. In the Alinza forest boomslang snakes and cobras are common. On the plains roamed white rhino, Cape buffalo, oribi, Chapman's zebra and eland. Durban Botanic Gardens provided green and hawksbill turtles and in the shallow water sported the horned cow-fish. Butterflies were plentiful including the African Monarch.

Dr. Beryl Corner, Hon. Paediatrician to Bristol Zoo, spoke on her work chiefly on baby gorillas. She was called in consultatively when a difficult birth was envisaged or special after-birth treatment was necessary. Special diets for baby gorillas had to be worked out when the mother's milk was insufficient or if she refused to accept her infant. Because of anticipated trouble from the male he was excluded from the birth enclosure. At later births the male was allowed to remain during the actual birth with no adverse effects.

Miss Dionis Macnair, Hon. Secretary of the New Forest Pony and Cattle Breeding Society, gave a lecture on New Forest Ponies in which she said that ponies had been in the New Forest before the last ice age, but today only about half of them are New Forest bred. During the time of Canute they were used as pack ponies for travelling salesmen and general travellers. Later they were used by smugglers and as pit-ponies. Before mechanisation in the forest they were haulage ponies. Because of their gentle disposition they make excellent mounts for children. The ponies have large heads and bone structure and are increasing in height. To improve their shape and general appearance Arab blood was introduced but that led to the ponies developing the wrong shaped mouth and teeth, which prevented them from masticating the harsher brash such as gorse. Besides the Arab introduction are Welsh cobs, Exmoor ponies and some from Rhum, which have yellow eyes. Their descendents can still be found in the Forest. Stallions are allowed to run on the forest for the breeding season but before doing so they have to pass a stiff veterinary test. If the ponies, cattle and deer were removed the Forest would revert to woodland and scrub. These animals are the architects of the Forest.

Predators and Prey. This is an excerpt from the Chairman's Lecture. Unlike plants which can make their own food from water, sunlight, carbon dioxide and minerals, animals have to obtain ready-made food consisting of proteins, carbohydrates, fats and other organic substances. They get it basically by eating plants or other animals. There are four major groups of animals: — herbivores, carnivores, omnivores and scavengers. Herbivores are vegetarians; carnivores are flesh eaters; omnivores feed on flesh and plants; scavengers obtain the bulk of their food from dead plant and animal matter.

Every creature that catches another for food is a predator, and each has its particular method of capturing its prey. The predators can be divided into three main groups: — ambushers, trappers and hunters. Ambushers lie in wait and rely on concealment and camouflage; trappers construct webs or other devices; hunters use their senses of sight, hearing and scent, also speed and cunning tactics.

South to the Antarctic a talk given by Mr. Brian Kirkpatrick on his work as a crewman on the supply ship, John Roscoe. He was mostly concerned with the welfare of the husky dogs, sledging and sealing operations. Only sufficient seals were slaughtered for the needs of the dog. His slides included dramatic pictures of sunlit icebergs.

The young naturalist Miss Sally Webster spoke of her experiences Under Canvas Around Kenya, illustrated by superb photography of animal life at close quarters. Sadly she reported the decreasing numbers of wildlife, particularly of elephant and rhino, partly as a result of territory loss, taken for production of food and increase of domestic animals and secondly by the ever present poaching. High prices for ivory and rhino horn for the supposed medicinal properties are blamed. Also included in her safari were visits to Lakes Nakuru and Manyara to study bird life, especially flamingoes and pelicans, and a climb up Mt. Kenya for the flora. Dogs of the world. The following is an excerpt from a lecture given by the Chairman.

The origin of the domestic dog has been the subject of extensive study beginning with Carl von Linné (1707-1778). Yet up-to-date science has not provided a conclusive answer as to how, when and where it originated. However, there are three possibilities: wolf, jackal, and a now extinct species of wild dog. The bias being on the wolf, the only member of Canidae with both intelligence and social behaviour.

Small pottery figures depicting dogs with curled tails were found in the Stone Age village settlement of Jarmo in Irak, the oldest dating from 6500 B.C. In 7500 B.C. the existence of domestic dogs in a British Stone Age settlement were found at Starr Carr in Yorkshire. Earlier evidence still was provided by a Harvard University student while excavating in the Jaguar cave in Idaho, North West U.S.A., who found evidence of domestic dogs' remains dating back to 8300 B.C.

Over a space of thousands of years packs of dogs followed in the wake of human habitations. Bolder dogs ventured close enough to scavenge scraps of food and later became sufficiently domesticated to act as guard dogs and later still as shepherds as man acquired sheep and cattle. So it can be seen that with further domestication and training the once wild dogs became mans companions as hunters.

Mammals in Captivity, a talk given by Mr. Graham Teasdill who, because of his Curatorships in various parts of the country, had the opportunity to visit zoos in those areas. He stressed that provided zoos had facilities for veterinary research, good breeding conditions and educational programmes they provided a worthwhile institution. Those run only as a means of entertainment and for monetary gain were to be discouraged. A lively discussion on the pros and cons of captive animals followed.

Mammalia and Natural History Field Meetings

During the year field meetings have been held mostly in the New Forest chiefly to study deer. Two members reported seeing in September a small herd of two fallow bucks and several does wallowing in a muddy area. This is not thought to be a common practice of this species. The Chairman would be pleased to have further records. One other point of interest was the sighting of adult fallow deer showing variations of colour—white, black, common, menil, a slaty-blue and a deep cream. Fawns from the mating between a white buck and a common doe are often cream, but change with each moult to become white. The number of deer seems to remain fairly static but they wander more.

The first meetings in October 1979 produced sightings of sika, red, fallow and roe. With the exception of roe it was the rutting season. The calls of the deer are as follows: — sika whistle, red bellow or roar, fallow groan. One large dark sika stag whistled close by and was answered by another further afield. The call consists of 3 or 4 whistles in quick succession after which it may be repeated 15 or 20 minutes later. A yearling hind, by nature inquisitive, watched the party for 2 minutes before moving off with all four legs leaving the ground simultaneously, a movement known as stotting.

Because the number of red deer is low there is little competition for hinds and calls are consequently less frequent. Thrashed scrub indicated that a stag had marked out his territory. One large stag, 2 staggies, 11 hinds and one calf were seen nearby. A fallow buck groaned at his rutting stand and began to chivy the does. This was an opportunity to tape the call for those not acquainted with it. The last meeting on 20th September in the sika area produced 17 sika in small pockets and one whistle was heard. The old established wallows were not active but 8 new single wallows spread around the area appeared active. The reason for the non-usage might be accounted for by excessive water. Further research on this is needed.

The visit to Bristol Zoo was a follow-up of Dr. Corner's lecture on gorillas.

Two natural history meetings were led by Mr. A. Grossert and Mr. R. G. Lees, both are dedicated naturalists. The former led, with the permission of the Mountbatten Estates, walks through woodlands, fields and by hedgerows which revealed many of their secrets. Mr. Lees named species of dragonflies, moths, butterflies and fungi.

Spetisbury area is usually an excellent venue for flora and fauna but this year heavy rain curtailed this. Parties were led by Mr. S. A. Scott and Mrs. H. Croad.

Marine Walk around Hengistbury Head and Estuary. Special emphasis was on seaweeds (algae). Twenty-five specimens were noted including Japanese seaweed. Others were *Enteromorpha intestinalis, Porphyra umbilicus* (purple lava), *Ulva lactuca* (sea lettuce), *Corallina officinalis* (coralline), *Chrondus crispus, Halidrys siliquosa* (sea oak). *Laminaria digitata* (oar weed), *Laminaria saccharina* (sugar tangle), *Pelvetia canaliculata* (channelled wrack), *Chorda filum* (sea rope), *Fucus spiralis* (flat wrack), *Fucus vesiculosus* (bladder wrack), *Focus serratus* (saw wrack), *Chorda filum* (sea rope), *Polyzoa* (sea mat), *Spirobis borealis, Fucus nodosis* (knotted or egg wrack).

A little digging in the estuary produced species of *Nereidae* (worms), "ghost" shrimps, shore crabs and flat fish. Growing on the mud flats were rice grass (*Spartina townsendii*) sea lavender and sea blight.

The names of leaders and lecturers are found elsewhere in the Proceedings and I express my gratitude for their help and support especially to Mrs. M. Arnold, my deputy.

Miss K. M. Bennetts, Chairman.

Zoology—Ornithology

The interest and enthusiasm in the study of birds shown by members of this Section is very encouraging and our fortnightly Field Meetings have been well attended.

Spring and Autumn are usually the most exciting times of the year for watching birds, and we visited coastal marshes such as Keyhaven, Stanpit, Poole Harbour and Dibden Bay, and headlands such as Hengistbury Head, Ninebarrow Down and Durlston Head to see migrant birds passing through on their way either into or out of this country. Yellow Wagtail,

Whinchat, Blackcap, Common Whitethroat and Lesser Whitethroat (the latter distinguished by greyer plumage above and whiter below, and in the spring by the quite different song—a loud rattling repetition of one note) and Spotted Flycatchers were to be found in a grassy lane at Dibden Bay at the end of August 1980, with one Pied Flycatcher. Several of this species were also seen flying in and out of trees at Ninebarrow Down in September. This is the flycatcher that breeds in North Wales and the Forest of Dean, and can be distinguished from the Spotted Flycatcher on autumn passage by the distinct white wing bar and paler throat.

We are always glad to see flocks of Siskin and Redpoll in the Forest during the winter. The Siskin call attention to themselves by their plaintive flight call and the Redpoll by a 'chuff-chuff-chuff' call which catches the ear.

A large flock of Brent Geese is now to be seen in Poole Harbour in the winter. We counted about 400 in January and they also appear at Keyhaven and Lepe.

A very successful visit to the Chew Valley Reservoirs took place at the end of February 1980. This is our best opportunity to see Goosander, the large and handsome 'saw-bill' duck which winters on this Reservoir.

A new and most exciting evening was organised in June by one of our members and a young friend who lives locally, to see Nightjars at Uddens near Ferndown. Four Nightjars appeared at dusk and we had a wonderful display of flying, wing-clapping, calling and 'churring' from a song perch, until we left at about 10.15 p.m.

Mrs. Catherine Whitby of the R.S.P.B. escorted us round Radipole Lake in September, in the absence of the Warden, and we were fortunate to have splendid views of the resident Bearded Tits clinging on to the tops of the reeds—the first time in many visits that we have had really good sightings of this handsome little bird. To complete our day we saw Ruff, and Greenshank at the edge of the Lake, three immature Little Gulls and two Black (or Marsh) Tern flying over the water. This tern dips for insects off the surface of the water instead of plunging in for fish as do the more common sea terns.

Two interesting lectures were given this year—one on 'Rubbish Tips' by H. A. Lilley of the R.S.P.B., and the other on the Birds of Portland by Frank Clafton, lately of the Portland Bird Observatory.

I am greatly indebted to those Members who have arranged and led Field Meetings for me, and to Miss Gwen Hayball, my Deputy Chairman, for all her help. *L. M. Maddox, Chairman.*

Local Record List of Birds of Particular Interest

Red-throated Diver, *Gavia stellata*. 29th January, South Haven Peninsula.
Slavonian Grebe, *Podiceps auritus*. 29th January, South Haven Peninsula. 26th February, Chew Valley. 21st March, Keyhaven.
Blacknecked Grebe, *Podiceps nigricollis*. 29th January, South Haven Peninsula.
Gannet, *Sula bassana*. (10). 25th April, Durlston Head.
Gadwall. *Anas strepera*. 29th January, Littlesea. 26th February, Chew Valley.
Goosander, *Mergus merganser*. 26th February, Chew Valley.
Water Rail, *Rallus aquaticus*. 11th April, Hengistbury Head.

Black tailed Godwit, *Limosa limosa*. 2nd October, 1979, Hengistbury Head. (4) 31st March, Keyhaven.
Green Sandpiper, *Tringa ochropus*. (4). 28th August, Dibden Bay.
Spotted Redshank, *Tringa erythropus*. (3) 21st March, Keyhaven. (4) 4th September, Keyhaven.
Greenshank, *Tringa nebularia*. 2nd October, 1979, Hengistbury Head. 21st March, Keyhaven. 4th September, Keyhaven. (9) 25th September, Radipole. 3rd October, Hengistbury Head.
Purple Sandpiper, *Calidris maritima*. 29th January, Shell Bay.
Ruff, *Philomachus pugnox*. (7) (Ruff & Reeve) 4th September, Keyhaven. 25th September, Radipole and Lodmore.
Little Gull, *Larus minutus*. (3). 25th September, Radipole.
Black Tern, *Chlidonias niger*. (2). 25th September, Radipole.
Puffin, *Fratercula artica*. (3). 15th May, Winspit.
Turtle Dove, *Streptopelia turtur*. 13th June, Thorncombe Woods.
Little Owl, *Athene noctua*. 14th February, Sowley Pond.
Nightjar, *Caprimulgus europaeus*. (4). 6th June, Uddens.
Woodlark, *Lullula arborea*. (2 prs.). 23rd July, Beaulieu Road.
Bearded Tit, *Panurus biarmicus*. (12). 25th September, Radipole.
Whinchat, *Saxicola rubetra*. 2nd October, 1979, Hengistbury Head. 28th August, Dibden Bay.
Black Redstart, *Phoenicurus ochruros*. 15th May, Winspit.
Grasshopper Warbler, *Locustella naevia*. 25th April, Durlston Head.
Lesser Whitethroat, *Sylvia curruca*. 15th May, Winspit. 28th August, Dibden Bay.
Cetti's Warbler, *Cettia cetti*. 25th September, Radipole.
Pied Flycatcher, *Muscipapa hypoleuca*. 28th August, Dibden Bay. 9th September, Ninebarrow Down.
Siskin, *Carduelis spinus*. (60). 15th November, 1979, Acres Down.
Redpoll, *Carduelis flammea*. (15) 15th November, 1979, Acres Down. (6) 14th February, Sowley Pond. 23rd July, Beaulieu Road.
Tree Sparrow, *Passer montanus*. 14th February, Sowley Pond.

Library

Purchases of new books have been somewhat limited due to the many demands upon the Society at this time.

Nevertheless, although few in numbers, useful additions were made to the library, Volume 2 of "*The Handbook of the Birds of Europe, the Middle East and N. Africa*" being the most important of the year.

A major achievement has been the binding of all outstanding copies of "Nature" dating back to 1973. This weekly magazine is donated by Miss F. Penrose, and the binding was arranged by Mr. F. W. Wilson at little cost to the Society funds due to generous donations from many members, and I would like to thank all those concerned.

Gifts of books and magazines, also from members have continued and with our limited purchases are even more welcome and much appreciated.

Finally, I am most grateful and much indebted to all the Library staff: Mrs. B. E. Hooton-Smith, Hon. Assistant Librarian, Miss E. C. Todd, Miss J. M. Merchant and Miss A. C. Norvall who between them continue the administration, care and maintenance necessitated by a collection of over 4,000 books.

R. E. Harwood, Hon. Librarian.

Members Days

This year we have had the usual welcome to new members by the President and the fascinating tour of the garden with Mrs. Hunt. Mrs. Sparkes and Mrs. Parkinson dealt with journeys in unusual ways. Mr. Robins and Miss Bennetts contributed questions for "quizes" on Bournemouth and animals. The members produced excellent slides and commentaries as well as holiday stories and descriptions of souvenirs and very concise and informative accounts of their hobbies. Readings from Gilbert White were well chosen and often amusing.

I wish to thank all those who have given me so much help during my first year of office and also those who have deputised when I have been absent. *H. M. Dickinson, Chairman.*

Museum

As Curator I wish to thank Mrs. Beryl Taylor, Chairman of Geology for her very conscientious hard work that she has put into collating and labelling afresh the many items in our very valuable and extensive collection of geological specimens which are housed in our Museum.

I also wish to thank our Chairman of Mammalia, Miss K. M. Bennetts, for taking us to Bristol Zoo, where we saw their splendid collection of animals etc. under very ideal conditions. One could not also fail to appreciate the surroundings of beautifully arranged flower beds, lawns, lakes and magnificent trees, which we saw under ideal conditions.

During the summer I received an application from Kinson C.P. School for permission to look around our museum. Especially the children wished to see our mummy as they were taking Egyptology as their present subject of study. This was granted by council and so 34 most polite and knowledgeable children duly arrived by coach, together with their headmaster and three other teachers. Miss Bennetts had very kindly consented to help me organise this visit. After we had welcomed the children I explained to them what museums were for etc. Then we divided these pupils into two separate groups. I took one party upstairs to look at the Diorama and Archaeology room, not missing of course the mummy in its decorated case. The second party was escorted round the main hall and lower rooms by Miss Bennetts. We then changed over parties and repeated the process. After the head had expressed their grateful thanks to us, the children then departed to their coach. As they went, waving their hands which were still clutching pads of notes which they had made during their peregrinations on their two hour visit to No. 39.

Our Open Day was very successful indeed and Lord Stokes, who opened our museum, expressed his surprise at our presentation of so many varied displays of great interest. He also praised the idea of welcoming members of the younger generation to our museum so that they could enjoy, and use, their heritage built up over many past years. The use of our main lecture hall for the exhibits was also a new departure from previous years and was an experiment which worked well. The platform display was highly praised by Lord Stokes and also many of the

other arranged specimens by members of other sections of our Society. Lord Stokes also thought our Open Day was a remarkably good example of what a society like B.N.S.S. could do to help the public see, and understand, what they could expect if they became members eventually.

Our thanks must go to those who manned the tea and refreshment table, an experiment which was much appreciated by all.

Altogether a very good year has been enjoyed by all our members including your Hon. Curator. *W. A. Bray, Hon. Curator.*

The Garden

Mr. R. C. Crane, Mrs. L. V. Nicklen, Mr. F. Dain, and Mr. Huggins, have given valuable assistance in the garden. Some plants have been presented, including two trees: *Chamaecyparis* 'Dorset Gold' and a weeping pear. We still need more help in the winter as well as in the summer.

W. Chomé.

Lectures, Field Meetings and Visits, 1979-80

General **Chairman: Miss K. M. Bennetts**

		LECTURE	LECTURER
1980			
Mar.	25	Sounds of the Countryside	Miss U. M. Ogle and Mrs. L. Maddox
June	16	A risky Business	Robin Goodman
July	5	Sicily—And a Close Look at Etna	Miss M. Collinson
July	21	Around Wishford Magna — A Wiltshire Village	Miss B. Brazier
Aug.	11	Slides with a Difference	Miss Mary Exton
Aug.	16	Tea	H. Keith Spicer
Aug.	27	Himalayan Adventure	Mrs. J. F. Gray
Sept.	15	Your Life in their Hands	Ken Thompson

Archaeology and History **Chairman: W. V. K. Channon**

1979			
Oct.	17	An Archæological Tour of Sicily	Miss M. W. S. Davis
Nov.	17	Captain Cook — Famous Explorer — Unknown Man	Colin Dean
Dec.	17	Life with the Romans at Rockbourne Villa	Donald E. M. Jarvis
1980			
Jan.	14	Some Neolithic Monuments (including Avebury, Stonehenge and Carnac)	Rev. D. E. C. Jardine, M.A., DIP.THEOL.
Feb.	20	Survivors of the Great Fire of London	Miss P. E. Winter, M.A.
Mar.	8	The Moorish Influence on Spanish History (including Granada, Cordoba and Seville)	W. V. K. Channon
Apr.	23	Pompeii and Herculaneum	Miss M. W. S. Davis
May	19	Early Peoples of Australasia (Aborigines and Maoris)	Miss K. Milner Bennetts, F.Z.S.
June	18	Moghul India	W. H. Lee
Sept.	27	History of Bournemouth's Lost Railways	G. Teasdill, F.M.A., F.R.S.A., F.R.N.S., F.Z.S.

1980			
Apr.	29	Visit to the New Archæological Gallery at Scaplens Court Museum, Poole	W. V. K. Channon

Astronomy **Chairman: Graeme Nash**

1979			
Oct.	27	Planets	C. Pither
Dec.	29	Galaxies	G. Nash
1980			
Jan.	19	U.F.O.'s—Fact or Fiction?	G. Kirby
Mar.	29	Recent Solar Eclipses	A. Owen

Botany **Chairman: Mrs. D. Dain**

1979			
Oct.	24	Flowers of the Purbeck	J. R. Cox
Dec.	19	On the Roof of Europe	Mr. and Mrs. D. Parish
1980			
Jan.	12	European and Alpine Flora	Sqdn. Ldr. J. L. C. Banks
Feb.	2	Some Alpine Plants in Cultivation	S. C. S. Brown
Mar.	12	The Lazy Naturalist	Miss M. Nelson
Apr.	16	Wild Plants, Facts and Folklore	Wing Comm. Hunt, M.B.E.
Apr.	26	Flowers I have met on my Travels	Miss M. M. Brooks
June	4	Orchids of the Mediterranean	S. Davey
Sept.	3	Nigerian Plants and Vegetation	J. H. Elgood, M.A.
1979			
Oct.	11	Bolderwood	R. G. Lees
Nov.	1	Bolderwood	Robin Fletcher
1980			
May	20	Mr. and Mrs. Ratcliffe's Garden	Mr. and Mrs. Ratcliffe
May	29	Carey Heath, nr. Wareham	Mrs. Saunders
June	12	Durlston Head	Mrs. D. I. Dain
June	20	Wisley	R. G. Lees
June	26	Bindon Hill	R. G. Lees
July	17	Ulwell	R. T. Wall and Miss B. Norton
July	29	Gussage All Saints	R. G. Lees
Aug.	5	Markway	R. G. Lees
Aug.	9	Wootton	R. G. Lees
Aug.	15	Burbush	R. G. Lees
Aug.	19	Lady Cross Lodge	R. G. Lees
Aug.	29	Wootton Inclosure	R. G. Lees
Sept.	11	Corfe Castle	R. G. Lees
Sept.	18	Spetisbury	J. Hortop and R. G. Lees

Geography **Chairman: W. O. Robins**

1979			
Oct.	22	Bricks	F. R. Watson
Nov.	14	Western Anatolia (Turkey)	Miss M. W. S. Davis
1980			
Jan.	30	Thirteen years residence in Samoa	Rev. Ernest Edwards
Feb.	27	The land of the Long White Cloud	Mrs. Jessie George
Mar.	22	Geographical and Historical Facts of Leicestershire	F. Oldham
Apr.	14	Bulb Fields of Holland	Col. A. Hemsley
Apr.	30	Isle of Purbeck	W. O. Robins
May	24	Down the River Test	W. O. Robins
June	21	Farming and Wild Life in Dorset	Miss M. E. Dennis
July	14	Norway	Mr. J. Brooks
July	16	North Wales	W. O. Robins
July	30	Down Under. Part 2	H. L. Edwards
Aug.	30	Scilly Islands. Part 2	H. L. Chaney

Sept.	8	Coal	H. Brown
Oct.	25	Ordinance Survey, Maybush, Southampton	F. R. Watson
Nov.	27	Talbot Village	W. O. Robins
1980			
Apr.	18	Pug's Hole and Upper Bourne Valley	W. O. Robins
May	8	Wareham	W. O. Robins
June	27	Stockbridge and Danebury Camp	W. O. Robins
July	31	Swyre Head and Encombe	Mrs. W. O. Robins

Geology **Chairman: Mrs. B. Taylor**

1979			
Oct.	15	Geology in Scotland	Sqdn. Ldr. J. L. C. Banks
Oct.	23	In the Museum	Mrs. B. Taylor
Nov.	3	In the steps of Mary Anning	Mr. D. Dobson
Dec.	12	Further Steps in the Geological History of Britain	Mrs. B. Taylor
1980			
Jan.	3	In the Museum	Mrs. B. Taylor
Jan.	23	Iceland, Born Yesterday	Miss J. White
Feb.	11	"From China with Love", or "Feat of Clay"	Mr. W. A. Stinton, F.R.G.S., F.G.S.
Apr.	21	Carallan Collection	Mrs. B. Taylor
July	23	Collecting Rocks	Mrs. B. Taylor
Aug.	6	The Beauty of Stone in Town and Country	Mr. W. A. Stinton, F.R.G.S., F.G.S.
Sept.	17	Pre-Cambrian and other Delights	Miss J. White
Mar.	28	Geological Terrace	Mrs. B. Taylor
Apr.	11	Tyneham and Kimmeridge	Mrs. B. Taylor and Mrs. M. Saunders
Apr.	15	Bournemouth Cliffs	Mrs. M. Saunders
May	30	Hengistbury Head	Mrs. B. Taylor
June	10	Charmouth	Mrs. B. Taylor
July	10	Shell Bay for "Singing Sands"	Mrs. M. Saunders
Sept.	26	East Devon and Beer Quarry	Mrs. B. Taylor

Physics and Chemistry **Chairman: Dr. T. H. Blakeley**

1979			
Oct.	20	Technology and Society	R. Maycock
Nov.	19	Electronics Today	K. Oakley, B.SC.
Dec.	8	Aspects of Computing and their Social Implications	R. Ellis
1980			
Jan.	16	Corrosian	S. A. Scott
Feb.	9	A Look at Man-Made Fibres	N. Luckett
Mar.	15	Liquid Crystals	I. H. C. Roe, B.SC.
Apr.	19	Water Supply	F. Wood, O.B.E.
June	11	Glass-reinforced Plastics in Building	J. S. Jackson

Zoology—Entomology **Chairman: Sqdn. Ldr. J. L. C. Banks**

1979			
Oct.	10	Some rare and interesting Insecta	S. C. S. Brown
Nov.	28	Life histories of the British Butterflies (Pt. 2)	Miss M. M. Brooks
Dec.	5	Project *O. curtisii* (F/d results and conclusions)	S/Lr. J. L. C. Banks
1980			
Feb.	23	The classification of Insecta	S/Lr. J. L. C. Banks
Mar.	19	Origins and recolonisation of Lepidoptera in the U.K.	S/Lr. J. L. C. Banks
Apr.	12	The life-cycles of the British Butterflies (Pt. 3)	Miss M. M. Brooks
Sept.	20	The life-cycles of the British Butterflies (Pt. 4)	Miss M. M. Brooks

1980			
Mar.	27	Ferndown Forest area	S/Lr. J. L. C. Banks
Apr.	13	Oberwater area	R. G. Lees (Dep. Ch.)
May	1	Verwood area	R. G. Lees (Dep. Ch.)
May	13	Ashmore area	S/Lr. J. L. C. Banks
May	22	Tollard Royal woods	S/Lr. J. L. C. Banks
June	3	Visit to "World Wide Butterflies Ltd. (Sherborne)	S/Lr. J. L. C. Banks
June	9	Ponds, Brockenhurst area	S/Lr. J. L. C. Banks
July	1	Heaths, N. & S. of the "Spur" Road	R. G. Lees (Dep. Ch.)
July	15	Woods West of Salisbury	R. G. Lees (Dep. Ch.)
July	24	Bentley woods area	S/Lr. J. L. C. Banks
Aug.	1	Ballard Down	Miss M. M. Brooks
Aug.	8	Hod Hill area	R. G. Lees (Dep. Ch.)
Aug.	14	Martin Down area	R. G. Lees (Dep. Ch.)
Aug.	21	Ogdens Car Park area	R. G. Lees (Dep. Ch.)
Sept.	5	Martin Down	R. G. Lees (Dep. Ch.)
Sept.	12	Sowley pond area	R. G. Lees (Dep. Ch.)

Zoology—Mammalia and Natural History

1979			**Chairman: Miss K. M. Bennetts**
Oct.	31	Safari in S. Africa	Miss M. M. Brooks
Dec.	10	Just Like Us	Dr. Beryl Corner
Feb.	11	New Forest Ponies	Miss D. Macnair
Mar.	17	Predation—Predator and Prey	Miss K. M. Bennetts
May	3	South to the Antarctic	Brian Kirkpatrick
June	7	Under Canvas Around Kenya	Miss Sally Webster
June	28	Dogs of the World	Miss K. M. Bennetts
July	12	Some Scientific Elements of Communication in Animals	Dr. G. Ames
Sept.	6	Under Canvas Around Kenya, Part 2	Miss Sally Webster
Sept.	13	Mammals in Captivity	G. Teasdill
1980			
Oct.	9	Sika Deer	Miss K. M. Bennetts
Oct.	18	Red Deer	Mrs. M. Arnold and Miss K. M. Bennetts
Oct.	26	Burley area	Miss E. Souter and Miss K. M. Bennetts
Nov.	8	New Forest	Mrs. M. Arnold and Miss K. M. Bennetts
Nov.	20	Perrywood Ivy Enclosure	Mr. and Mrs. Parkinson
Dec.	6	Sika Deer Project XII	Miss K. M. Bennetts
1980			
Jan.	22	Anderwood Enclosure	J. G. Parkinson
Feb.	5	Sika Deer Project XIII	Miss K. M. Bennetts
Feb.	22	Bolderwood/Bratley	Mrs. R. Crane and Miss K. M. Bennetts
Mar.	6	South Oakley area	Miss E. Souter and Miss K. M. Bennetts
Mar.	18	Horton area	Mrs. M. Arnold and Mrs. L. V. Nicklen
Apr.	1	Charlton Marshall River Walk	S. A. Scott
Apr.	15	Brockenhurst/Beaulieu for Deer	Mrs. M. Arnold and Miss K. M. Bennetts
Apr.	24	Vereley/Burley area	Mrs. M. S. Lund and Miss W. Davis
May	2	"Pond Dipping" (Natural History)	Dr. T. M. Bell and Miss C. F. Noll
May	14	Hedgerows, Fields and Woodlands (Natural History)	A. Grossert

May	23	Bristol Zoo	Miss K. M. Bennetts
May	28	Wootton Enclosure (Natural History)	R. G. Lees
June	5	Milford-on-Sea (Natural History)	Miss K. M. Bennetts
June	17	Spetisbury Area (Natural History)	Mrs. H. Croad
July	3	Highland Water Enclosure	Mrs. Crane and Miss K. M. Bennetts
July	19	Holmsley Area (Natural History)	R. G. Lees
July	22	New Forest	Mrs. J. L. North and Mrs. J. M. Butts
Aug.	2	Anderwood Enclosure	J. G. Parkinson
Aug.	7	Hengistbury Head Marine Walk	Mrs. M. Arnold and Miss K. M. Bennetts
Sept.	2	Markway Hill	Mrs. L. V. Nicklen and Mrs. I. A Beckwith
Sept.	22	Perrywood Ivy Enclosure	Mr. and Mrs. Parkinson
Sept.	30	Frame Heath and Hawkhill Enclosure	Miss K. M. Bennetts

Zoology—Ornithology **Chairman: Mrs. L. M. Maddox**

1979			
Nov.	24	Rubbish Tips	H. A. Lilley
1980			
Jan.	21	Birds of Portland	Frank Clafton

1979			
Oct.	2	Hengistbury Head	R. G. Lees
Oct.	16	Carey Heath, Wareham	Mrs. M. Saunders
Nov.	2	Stanpit Marsh	J. G. Parkinson
Nov.	15	Acres Down	Mrs. L. M. Maddox
Dec.	4	Avon and Sopley	Mrs. L. M. Maddox
Dec.	18	Shipstall Point, Arne	Mrs. L. M. Maddox
1980			
Jan.	15	International Wild Fowl and Wader Count	Mrs. L. M. Maddox
Jan.	29	South Haven Peninsula	J. G. Parkinson
Feb.	14	Sowley Pond and Lepe	R. G. Lees
Feb.	26	Chew Valley Reservoir, near Bristol	Mrs. L. M. Maddox
Mar.	11	Badbury Rings area	W. G. Mills
Mar.	21	Keyhaven Marshes	J. G. Parkinson
Apr.	10	Hengistbury Head	R. G. Lees
Apr.	25	Durlston Head	J. G. Parkinson
May	9	Stanpit Marshes	J. G. Parkinson
May	15	Winspit	Mrs. L. M. Maddox
May	31	Kingston Common	Mrs. L. M. Maddox
June	6	Evening Meeting at Uddens, Ferndown	T. R. Wall and James Phillips
June	13	Thorncombe Nature Trail	Miss G. Hayball
June	23	Beaulieu Road	Mrs. L. M. Maddox
July	4	East of Cranborne	Mrs. M. Saunders
July	18	Frame Heath	Mrs. L. M. Maddox
Aug.	12	Bolderwood	J. G. Parkinson
Aug.	20	Oberwater	J. G. Parkinson
Aug.	28	Dibden Bay	R. G. Lees
Sept.	4	Keyhaven	J. G. Parkinson
Sept.	9	Ninebarrow Down	Mrs. L. M. Maddox
Sept.	25	Radipole Lake and Lodmore	R.S.P.B. Warden and Mrs. L. M. Maddox

MEMBERS' DAYS

Chairman: Mrs. H. M. Dickinson

1979			
Oct.	8	Members' Slides	Members
Nov.	21	Mystery Journey from A-Z Pictorial "Quiz"	Mrs. M. Sparkes
1980			
Jan.	9	New Members' Day	The President
Feb.	13	Hobbies	Members
Mar.	10	Readings from works of Gilbert White	The President Mrs. F. M. Crawshaw Mr. F. Oldham Mrs. M. W. Saunders
Apr.	9	Journey with a Difference Illustrated by tea towels	Mrs. M. Parkinson
May	21	"Quiz" on Bournemouth	Mr. W. O. Robins
June	25	Round the Garden at No. 39	Mrs. A. K. Hunt Mrs. W. Chomé
July	9	Animal "Quiz"	Miss K. M. Bennetts
Aug.	13	Members' Slides	Members
Sept.	10	Holiday Souvenirs	Members

Bournemouth Natural Science Society

List of Presidents (1903-1980)

1903—04	J. E. Beale (Mayor of Bournemouth)
1904—06	G. E. J. Crallan, M.A., M.B., M.R.C.S.
1906—07	H. J. Waddington, F.L.S.
1907—09	A. Ransome, M.A., M.D., F.R.C.P., F.R.S.
1909—10	A. Smith Woodward, D.SC., F.R.S., F.L.S., P.G.S.
1910—11	Dukinfield H. Scott, M.A., LL.D., F.R.S., F.L.S., F.G.S.
1911—13	Sir E. Ray Lankester, K.C.B., M.A., LL.D., F.R.S., F.L.S.
1913—16	Sir Daniel Morris, K.C.M.G., J.P., M.A., D.SC., D.C.L., F.L.S.
1916—17	The Rt. Hon. the Earl of Malmesbury, D.L., J.P.
1917—18	Sir Jethro J. H. Teale, M.A., D.SC., LL.D., F.R.S.
1918—20	Field Marshal Lord Grenfell of Kilvey, G.C.B., G.C.M.G., LL.D., F.S.A.
1920—21	Lt. Col. Sir David Prain, C.M.G., C.I.E., F.R.S.
1921—23	F. G. Penrose, M.D., F.R.C.P., F.Z.S., M.B.O.U.
1923—24	Sir F. W. Keeble, K.B.E., D.SC., F.R.S.
1924—26	Hubert Painter, B.SC., F.C.S.
1926—28	Heywood Sumner, F.S.A.
1928—29	Claude Lyon
1929—30	Professor F. O. Bower, D.SC., F.R.S.
1930—31	Henry Bury, M.A., F.L.S., F.G.S.
1931—32	Dukinfield H. Scott, M.A., LL.D., F.R.S., F.L.S., F.G.S.
1932—33	J. P. Williams-Freeman, M.D.
1933—34	Rev. F. C. R. Jourdain, M.A., F.Z.S., M.B.O.U.
1934—35	Sir F. W. Dyson, K.B.E., M.A., D.SC., LL.D., F.R.S., F.R.A.S.
1935—36	Henry Bury, M.A., F.L.S., F.G.S.
1936—37	Sir Harold Carpenter, M.A., D.SC., F.R.S.
1937—38	Professor John Cameron, M.D., D.SC., F.R.S.E.
1938—39	Professor G. D. Hale Carpenter, M.B.E., D.M., F.L.S., F.Z.S., F.R.E.S.
1939—40	W. G. Aitchison Robertson, M.D., D.SC., F.R.C.P., F.R.S.E.
1940—41	Rev. Professor M. C. Potter, M.A., D.SC., F.L.S.
1941—42	Inst.-Capt. M. A. Ainslie, R.N., M.A., F.R.A.S.
1942—43	William C. Simmons, B.SC., A.R.C.S., F.G.S.
1943—44	Professor S. Mangham, M.A.
1944—45	A. S. Hemmy, B.A., M.SC.
1945—46	J. F. N. Green, B.A., F.G.S.
1946—47	Lt.-Col. C. D. Drew, D.S.O., F.S.A.
1947—48	W. J. Woodhouse, A.C.P.
1948—49	Edward Hindle, M.A., D.SC., F.R.S., F.Z.S.
1949—50	Mrs. W. Boyd Watt, F.Z.S., M.B.O.U.
1950—51	Professor Sir R. A. Peters, M.C., M.A., M.D., F.R.S.
1951—52	Ernest Chambers, F.L.S.
1952—53	F. Williamson, F.R.HIST.S.
1953—54	H. E. Clarke, M.A., B.SC., F.R.I.C.
1954—55	W. J. Read, M.SC., F.R.I.C.
1955—56	W. S. Brown, B.SC.
1956—57	A. W. Legat, M.INST.C.E., M.I.S.E.
1957—58	D. A. Wray, PH.D., M.SC., F.G.S.
1958—59	Miss M. A. M. Penrose, B.SC.
1959—60	Miss D. M. Lowther, B.SC.
1960—61	James Fisher, M.A., F.L.S., F.Z.S.
1961—62	W. P. Winter, B.SC.
1962—63	F. H. Perring, PH.D., M.A.
1963—64	Miss F. M. Exton, B.A.
1964—65	Dame Kathleen Lonsdale, D.B.E., D.SC., F.R.S.
1965—66	A. J. Butcher, F.R.I.B.A.
1966—67	Mrs. A. K. Hunt, B.SC.
1967—68	Professor F. Hodson, PH.D., B.SC., F.G.S.
1968—69	T. Marshall Bell, B.A., M.B., B.CH.
1969—70	Ernest Chambers, F.L.S.

Bournemouth Natural Science Society

List of Presidents (1903-1980)

(continued)

1970—71	Graham Teasdill, F.M.A., F.R.S.A., F.R.N.S., F.Z.S.
1971—72	Miss Ursula M. Ogle
1972—73	Sqd.-Ldr. J. L. C. Banks
1973—74	Miss K. Milner Bennetts, F.Z.S.
1974—75	Donn Small, M.SC.
1975—76	S. C. S. Brown, F.D.S., R.C.S., L.D.S.
1976—77	F. Oldham, J.P., M.A., B.SC., F.INST.P.
1977—78	W. H. Lee
1978—79	Mrs. G. M. Thomas, M.A., B.LITT.
1979—80	T. A. Crawshaw, F.M.INST.M.C.
1980—81	Miss M. M. Brooks, PH.C., M.P.S., F.R.S.H., F.R.E.S.

PUBLICATIONS RECEIVED

The following publications were received in the Library during the year. Some of them were gifts from members who subscribe personally to the particular Society. The Library Committee are glad to record their appreciation of such gifts.

1. Publications issued by a Society or Institution

Birmingham Natural History & Philosophical Society—*Proceedings.*
Botanical Society of the British Isles—(1) *Watsonia,* (2) *Proceedings.*
British Trust for Ornithology—(1) *News Bulletin,* (2) *Bird Study.*
California Academy of Sciences—*Proceedings.*
Cambridge Antiquarian Society—*Proceedings.*
Dorset Natural History & Archæological Society—*Proceedings.*
Hampshire Field Club & Archæological Society—*Proceedings.*
Hampshire and Isle of Wight Naturalists' Trust Ltd.—*Proceedings.*
Hertford Natural History Society—*Transactions.*
Linnean Society of London (1) Botany, (2) Biology—*Proceedings.*
National Trust—*Newsletter.*
Royal Horticultural Society—*"Gardens".*
Royal Society for the Protection of Birds—*"Birds".*
Senckenbergische Naturforschende Gesellschaft—*"Natur & Museum".*
Smithsonian Institution, U.S.A.—*Annual Report.*
Société Jersaise—*Annual Bulletin.*
The British Entomological & Natural History Society—*Proceedings & Transactions.*
Torquay Natural History Society—*Transactions & Proceedings.*
Tromso Museum, Norway—(1) *"Astarte",* (2) *Acta Borealia.*
Upsala University, Sweden—*Acta Phytogeographica Suecica.*
Zoological Society of London—
Christchurch Harbour Ornithological Group—*Birds of Christchurch Harbour report.*

2. Periodicals received

"Nature", The Dorset Magazine, The New Scientist, Chemistry in Britain. Alpine Garden Society Bulletin, Oryx, Proceedings Geologists Association.

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